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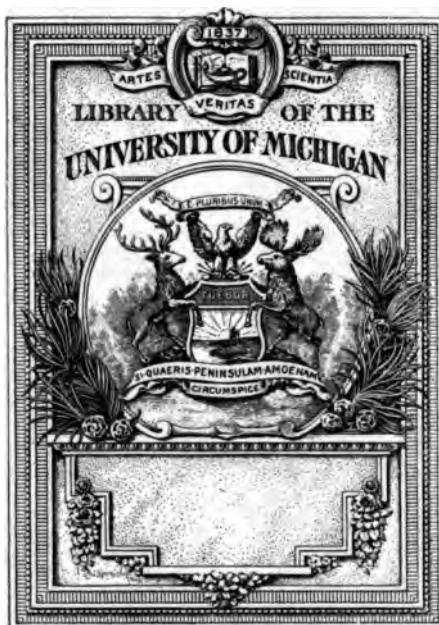
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THE
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BEING
A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS.

TOGETHER WITH
A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY
W. H. RANKING, M.D., CANTAB.,
PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL,

AND
C. B. RADCLIFFE, M.D., LOND., L.R.C.P.,
PHYSICIAN TO, AND LECTURER ON MATERIA MEDICA AT, THE WESTMINSTER HOSPITAL.

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ABSTRACT OF THE MEDICAL SCIENCES,

3c. 3c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*On the protective and modifying power of Vaccination.*
By Dr. E. C. SEATON.

(*Journal of Public Health*, Jan., 1857.)

DR. SEATON commences this paper by correcting certain erroneous notions which are entertained in many quarters as to the views which were held by Dr. Jenner upon the protective power of vaccination, and he shows that when Dr. Jenner spoke of vaccination as an absolute and perfect protection, he meant that it protected to the same extent and in the same manner that small-pox itself did. He then regrets that the rules and cautions laid down by Jenner for the performance of vaccination should so often be departed from, and that the operation, from its simplicity, should not always have received, either from medical men or from parents, the attention due to it. Hence it is necessary, in every case of small-pox in which previous vaccination was alleged, to ascertain accurately whether the person had really gone through the vaccine disease or not. In determining the relative protection against small-pox afforded by a previous attack of the disease casually or by inoculation on the one hand, and by vaccination on the other, there is also the necessity, in the former case, of determining whether the primary disease had really been small-pox, or whether the inoculation had been successful, and there is the necessity, in both cases, of being assured with regard to the present attack that it was a genuine one, and not one of the many diseases which had at different times been mistaken for small-pox. Again, the comparison must be made in classes of individuals similarly circumstanced as to age, condition of life, liability to exposure, &c. &c. These conditions are all fulfilled in the Royal Military Asylum, in which it had been shown, by Dr. Balfour, that out of every 1000 boys admitted protected by previous small-pox, 6·15, and out of every 1000 protected by vaccination, 7·06, were attacked subsequently by small-pox. This result might be looked upon as conclusive as regards children under puberty, and it shows that as regards them Dr. Jenner's opinion of the equal protecting value of small-pox and of vaccination was borne out. These statistics moreover, were of great value in showing that small-pox after small-pox was by no means the rare occurrence it was sometimes represented to be, a point which must always be borne well in mind in any attempt to estimate the value of vaccination. There were no statistics by which the relative protection afforded by vaccination and by small-pox could be estimated with the same precision for the adult. The statistics of the army and navy were not available for this purpose, though they afforded most conclusive proof of the general value of vaccination, these forces being at times much exposed, and four-fifths of them owing their protection to vaccination. Dr. Seaton then enters into the question of the protection afforded by vaccination under circumstances of long-continued exposure during epidemic influence. Having mentioned some striking facts on this subject, he gives the results of an inquiry instituted some few years ago by the Epidemiological Society as to the extent to which medical men, whose profession

exposed them of course, in a peculiar degree, to small-pox, were liable to take on the disease. It appears from the returns, that of 347 medical men protected by vaccination, 44, or 12·6 per cent., had had variola; and of 82 who had been inoculated in infancy, 3, or 3·6 per cent., had variola subsequently. Dr. Seaton cautions his readers against accepting these statements as representing correctly the ratio in which medical men, in the ordinary practice of their profession, were liable to variola. In the first place, the inquiries had been addressed to a great many more who had not replied. Now, as variola after inoculation, or after vaccination, was undoubtedly the exceptionable case, the probability is, that in every case in which it occurred it was reported, and that those who did not reply had not suffered. This would materially lessen the percentage. Again, the inquiries were addressed to *selected* persons: the selection being, in many instances, made because of the known extent to which they were in the habit of meeting with small-pox. And, further, a great many of the cases of small-pox thus reported were cases of variolous inoculation in the dissecting-room. Making allowance for these points, the returns would, at first sight, show that under circumstances of considerable exposure, the protecting power of vaccinia was inferior to that of variola. But an analysis of the returns, with the view of determining the *character* of the vaccination relied on, gave some interesting results. Of 18 who stated that there was no cicatrix visible, 3 had had small-pox, or 16·6 per cent.; and of 32 who made no mention about the cicatrix, 6 had had small-pox, being about the same proportion. Of 235, with one or two cicatrices, 33 had had small-pox, or 14 per cent.; but of 62 with three, four, or more cicatrices, 2 only had had small-pox, or 3·2 per cent.

Taking these facts in connection with the immense value of the cicatrices as an index of the efficiency of vaccination, as shown by the researches of Mr. Marson, the results are sufficiently remarkable. It does not appear that the liability to take small-pox is any greater in those having more than two cicatrices of vaccination than in those who have had previous small-pox, so far as these observations go. Granting at once that the number of observations is far too limited to allow us to draw with confidence any positive conclusion, they certainly justify a negative one, and call upon us to pause before we admit that duly and efficiently performed vaccination will not protect the system, even under circumstances of severe exposure, to the same extent that inoculation itself would have done, as stated by Jenner. It is clear, at all events, that there was no truth in those statements, which treat of small-pox, after inoculation, as a bare possibility scarcely to be taken into account; and of small-pox, after vaccination, as a thing almost to be expected, especially after a lapse of years. In reference to the doctrine involved in this latter phrase, viz., that the protecting influence of vaccination is liable to wear out, Dr. Seaton cites various facts to show that it ought not to be accepted. The author then proceeds to consider the modifying power of vaccination; and he exhibits in a table the results of various returns to the Epidemiological Society of the observations made in various epidemics, and of the records kept by Mr. Marson, at the Small-pox Hospital. He shows that the mortality from small-pox, in persons reputed to be vaccinated, was not more than 3 or 4 per cent. under favorable circumstances, nor more than 7 under the more unfavorable, while the mortality of the natural small-pox varied from 20 to 35 per cent. He gives an account of the analysis of the cases of post-vaccine small-pox in the Small-pox Hospital, made by Mr. Marson, and published in his paper in the "Medico-Chirurgical Transactions," which Dr. Seaton characterizes as the most important contribution ever made to our knowledge on this branch of the subject. By these it appears that in persons well vaccinated, and having more than two cicatrices, the mortality was less than 1½ per cent. It is only, the author observes, by taking in connection the protecting and modifying powers of vaccination that we could arrive at any just estimate of the real value of the discovery; and he shows from the preceding facts, that of a certain number of children vaccinated in infancy, the proportion who would at any period of life take fatal small-pox was infinitely smaller than the number who, out of a given number of children inoculated, would die from the immediate effects of the operation itself. Hence the practice of vaccination was infinitely preferable to inoculation as regarded the individual. The great objection, however, to inoculation is, that it kept alive and propagated the disease. This was the case in the present day in India, in Ireland, and other places, where it was still practised, and it had been the case

in England. Hence during last century, while inoculation was in vogue, the mortality from small-pox underwent no diminution; while since the introduction of vaccination it had steadily and progressively declined. For the ten years ending 1800, the average annual mortality from small-pox within the Bills of Mortality was 1780 in a population ascertained in 1801 to be 261,233; while the four years ending 1841, it was only 1659 in a population ascertained in 1841 to be nearly 2,000,000. Then came the act establishing parochial vaccination, and for the fourteen years ending 1855 the average annual mortality from small-pox was but 821 in a population considerably above 2,250,000. The author then shows that by far the greater part of this mortality was unnecessary and preventible; and comparing and contrasting the mortality from small-pox in this country with that existing in other countries, and glancing at the state of Scotland, Ireland, and other colonies in this respect, he pronounces our present condition to be most discreditable to us as a nation, and especially as *the* nation in which the discovery of vaccination took place, and expresses his hope that when the attention of the legislature was turned, as it would be immediately, to the subject, the medical profession would make its voice heard in proclaiming the value of the practice, and the futility of the objections that had been raised, and in pointing out and supporting the establishment of a better system for securing its benefits to the entire population.

ART. 2.—*Our Losses in the Crimea.* By Colonel TULLOCH:

(*Medical Times and Gazette*, March 28, 1857.)

With a view to support the statements of the late Crimean Commissioners as to the frightful extent of the mortality among the soldiers, Col. Tulloch has published some statistics showing the prevalence and fatal character of the diseases in the Army of the Crimea, during the winter of 1854-5, which are well deserving of careful study. Although, from the circumstance of these statistics having been prepared from returns obtained in the Crimea during a period of active service, they may not be so complete and accurate in all the details as could be desired, yet Col. Tulloch's experience and reputation as a statist afford a sufficient guarantee of their general accuracy.

The period included in Col. Tulloch's observation comprises the seven months, from October 1st, 1854, to April 30th, 1855,—that period during which the army experienced unexampled privations, and suffered unprecedented losses. "Compared with these losses," says the author, "the mortality in our army on all previous occasions sinks into comparative insignificance; even that of Walcheren, which threw the nation into mourning, and for years convulsed our senate, did not exceed a fourth part of the average here recorded. Armies have perished by the sword, they have been overwhelmed by the elements; but never, perhaps, since the hand of the Lord smote the host of the Assyrians, and they perished in a night, has such a loss from disease been recorded as on this occasion."

During the seven months reported upon, the average strength of the army amounted to 28,939 men, among whom the admissions into hospital were 53,913, being in the ratio of 1863 per 1000 of the strength; or in other words, on an average nearly every man must have been twice in hospital during that period. The deaths, including those at Scutari, but exclusive of men killed in action, were 10,784, or 372 per 1000 of the strength—a mortality so enormous that had it continued at the same rate, and no reinforcements been sent out, the whole army would have been annihilated in about sixteen months. Truly, such an amount of sickness and mortality demanded a rigid inquiry, to ascertain whether it arose from unavoidable circumstances, such as the powerful destructive agents of the enemy, or the natural and for the time irremediably unhealthy character of the climate or soil; or whether it was not attributable to *preventible* causes, which might have been foreseen, and with the exercise of a moderate amount of judgment, energy, and common sense, have been obviated. That it was not attributable to the destructive weapons of war is incontestably shown by the fact that only 1 in 13 of the admissions into hospital and 1 in 15 of the deaths resulted from wounds and injuries. The remainder was caused by disease, which there is too much reason to fear arose from the carelessness, incapacity and obstinacy of those on whom the supply of the soldiers with food, clothing, and shelter devolved. The following

summary shows the diseases by which the admissions and deaths were caused in the different arms of the service :

	FEVERS.	DISEASES OF LUNGS.	DISEASES OF STOMACH AND BOWELS.	SPASMODIC CHOLERA.	SCURVY.	FROSTBITE.	ALL OTHER DISEASES.	TOTAL, EXCLUDING WOUNDS AND INJURIES.	PROPORTION PER 1000 OF STRENGTH.
INFANTRY.									
(Strength, 23,755.)									
Admissions into Hospital,	8959	2997	18838	1879	1834	1844	5631	41982	1766
Deaths in Crimea and Scutari,	1930	313	4071	1123	192	399	379	8407	354
CAVALRY.									
(Strength, 1915.)									
Admissions into Hospital,	579	237	1567	45	141	33	766	3368	1759
Deaths in Crimea and Scutari,	48	25	130	38	...	8	17	266	139
ARTILLERY AND SAPPERS.									
(Strength, 3249.)									
Admissions into Hospital,	855	204	2477	83	92	70	697	4478	1378
Deaths in Crimea and Scutari,	93	27	286	67	3	21	44	541	166

The causes which gave rise to this enormous mortality "may be briefly summed up as—improper food, no means of cooking it, insufficient clothing, no adequate shelter from the inclemency of the weather, want of fuel, excessive duty of a most severe and harassing description (including the bringing up of supplies from Balaklava and digging roots for fuel), want of medicines and medical comforts when sick, and the necessity of treating disease under circumstances which almost precluded the chance of success."*

The preceding table furnishes strong corroborative proof of the truth of these conclusions, for the mortality was great in proportion to the exposure of the men, and their inability to procure proper food. Thus the mortality in the Cavalry was less than two-fifths of what occurred among the Infantry. "So marked a difference," says Colonel Tulloch, "may be traced to the circumstance that this arm of the service was entirely exempt from the labors of the siege; that they had but little night-duty; and that, being in the vicinity of Balaklava, they had greater facilities for getting supplies." Among the Artillery and Sappers the mortality was rather higher than in the Cavalry, but still much below that of the Infantry. They were employed in the trenches in a smaller proportion than the men of the Line, and "the batteries, having their wagons, were regularly provided with rations and other supplies, and were thus spared the fatigues they would otherwise have undergone for that purpose." The Sappers and Miners also, besides having two nights in bed, which was often more than the men of the Line, "had an officer at Balaklava, who purchased all kinds of groceries, flour, and other food for them from the shipping, whenever they could be obtained, and had them conveyed to the front on fifteen mules belonging to the corps, which were maintained effective throughout the winter."

The marked exemption from mortality of these two arms of the service illustrates the influence of the causes already referred to in the destruction of life in the Crimea. Colonel Tulloch in his report furnishes additional evidence that the losses sustained by our army depended on "mortal agency," by contrasting the deaths in different portions of the infantry. Thus, in the Highland Brigade (3d Regiment), which was stationed at Balaklava during the whole period, and was therefore nearer its supplies, had less trench duty, and was early huttet, the deaths were in the proportion of 24 per cent of the strength. The loss in four regiments, which arrived early in January, after the period at which the greatest privations from want of food and clothing and from excessive work was past, was only 7 per cent. Four regiments which had arrived early in December, and were consequently more exposed to the wet, cold, and privations, lost 27 per cent, while the deaths in the

* British and Foreign Medical and Chirurgical Review for July, 1856, p. 118.

rest of the infantry employed in the sieges averaged 45 per cent. in the seven months. In some of the regiments the mortality was very high. The 46th, for instance, was nearly annihilated; nor is this surprising, when we learn on the authority of the commanding officer, that the men were in the trenches twelve hours in every twenty-four in November, and ten and a half in every twenty-four in December; "and it was stated by the surgeon and verified by the lieutenant-colonel, that at one time the men were in the trenches for six successive nights, and had only one night in bed in the course of a week, but that afterwards the duty was better regulated."

It is melancholy to reflect how many thousand lives have been sacrificed, and how much our national honor has suffered, from the disgraceful incompetency of the staff of that army. Notwithstanding the opinion of the Board at Chelsea, that no one was to blame, but that the losses were unavoidable, we feel sure that no impartial person can study Colonel Tulloch's book without arriving at the conclusion, that one-third of the force perished in that winter "from the slow, though sure operation of disease, produced by causes most of which appeared capable at least of mitigation." That the mortality could not have been, "in any important degree, the result of climate, must be inferred from the circumstance of this loss having occurred in a country which, by the concurrent testimony of nearly all the medical officers, as well as the experience of the following year, appears to have been as healthy as Great Britain, except, perhaps, as regards cholera."

The statistics of the Army in the Crimea forcibly illustrates the importance of the study of military hygiene. The loss among the infantry in seven months was 755 killed in action and in the trenches—608 died of wounds and injuries, and 9383 from disease. It is to the *prevention* of disease that attention should be especially directed to preserve an army efficient, and to save the lives of the soldiers.

ART. 3.—On the Climate of the Crimea during the first year of the Campaign.

By Dr. SMART, R.N., late in charge of the Naval Brigade Hospital, Balaklava.

(*Lancet*, Jan. 10, 1857.)

The following remarks (which form the substance of a recent communication to the Epidemiological Society) will tend to show very clearly, that the terrible losses of our army during the first year of the late campaign in the East are scarcely attributable to the inhospitable character of the climate.

The Crimea (observes Dr. Smart) being almost surrounded by water, and connected by means of a narrow short isthmus with a vast extent of flat country, possesses, from its conformation and contiguity, a climate partaking of both those orders of characteristics that are contradistinguished by the terms continental and insular. These opposite characters do not, however, impress their traits continuously, so as to mark each its own seasons of the year; but by their frequent alternations serve rather to stamp the climate as an irregular and inconstant one, from which it may be anticipated that the advent and course of the seasons will be found to vary much in a series of succeeding years.

In describing briefly the leading features of the seasons throughout the first year of the occupation by the Allies, and that of the capture of Sebastopol, each in succession, it may be said of the winter that its *mean* temperature was mild, much moisture being deposited in the early part of the season, to the end of December, after which there were heavy falls of snow, with low depression of the thermometer continuously through a space of three weeks. This, which may be regarded as the climax of the winter, occurred early in January; and in receding or advancing from that period, there was not any great duration of cold. A most striking peculiarity of the winter was the suddenness of great variations of temperature, by which animal and vegetable life was submitted with rapidity to the accelerating and re-productive efforts that more properly belong to the spring, and again acted on by the retarding influences of the depth of winter, very marked changes of this kind being completed in the course of a few hours. These were simply the interchanges of the continental and insular conditions of climate which were felt extremely in the position occupied by the Allies—the Chersonese—because the mountain barrier that shelters from the northern influences does not extend so far west. As early as the middle of February, the thermometer was observed to have risen to 70° Fahr.; and

the *galanthus* and *crocus*—the first offerings of a grateful soil—were seen thus early bedecking every bank; and numerous varieties of bulbous and orchidaceous plants were in flower. The spring season, from the early part of March to the end of April, was warm, and the ground was moistened by showers that fell frequently in the day, the night being cold, clear, and dewy. The invigorating effects of this season on the animal kingdom was strongly exemplified in the large flights of migratory birds that tarried on these shores on their course to their northern fields, in the improved condition of those domestic animals that had withstood the vicissitudes of the winter, and in the joyful spirit pervading the camp.

The heat of the summer was at no time *excessive*: not equal to that to which our troops are accustomed when stationed at Gibraltar and Malta; but in May and June it was oppressive from extreme dryness of the atmosphere, with northerly winds that absorbed every atom of moisture, giving very few showers in return. This dry heat was much complained of, because of the great evaporation that goes on from the surface of the body while it lasts, but it does not appear to be unhealthy. The summer season changed, imperceptibly, into that of autumn; and, regarding the autumn as a whole, Dr. Smart knows no country in which the climate is found more agreeable to the sensations, by a succession of cool nights to warm, clear days, than marked its course to the end of October, when the north wind, blowing coldly at intervals, suggested the necessity of a return to winter clothing.

The change from autumn to winter, in 1854, was as sudden as that from winter to spring. This change depresses even more than that exhilarates, in consequence of the continued rains rather than of severe cold attending its commencement. The sudden mutations of temperature to which the climate of the Crimea is liable in the winter months, were more hurtful to the health of our forces than any other of the climatic conditions. These changes of heat and cold were the consequences of the shiftings of the winds from the northerly and southerly direction, or *vice versa*. A fall of 30° Fahr., within a few hours, was by no means an unfrequent occurrence.

It has been said, that these great vicissitudes of temperature of the winter season, together with the frequent electric changes of the summer, are dependent upon the alterations of the two principal winds, or rather on the changes of relative altitude and position of the planes of these atmospheric currents, as determined by the mixed continental and insular conditions of the land, and by the configuration of its surface. High mountains range along its southern coasts, and form a boundary rising into the clouds that causes the insular conditions of climate to predominate south of the barrier over that narrow strip of coast which resembles in its scenery, as well as in its climate, the Italian "Riviera," between Nice and Genoa. To this shore the imperial family and the nobility resort to enjoy the balmy influences of a southern clime, in villas seated amid the soft seclusion of luxuriant valleys, or on the sunny aspect of mountain slopes that decline rapidly towards the sea. Northward of the mountain range, the whole aspect of the country and its climate, except in a few sheltered vales, are assimilated to the continental conditions of Southern Russia. The flanks of the mountain range, of which the western was the seat of war, are obnoxious to all the inconveniences of the alterations of climatic condition to which allusion has been made. The character of the produce of a land, and the earlier and later date of its harvests, are general, but withal good criteria of the average conditions of a climate. To apply this, it may be stated, that on first arriving on these shores, in the middle of September, 1854, it appeared significant of a moderate *mean* temperature of the summer, that the cereals had just then been reaped, and were but partially gathered, while the grape was not ripe for the vintage; and the absence of the olive afforded evidence that the production of its oil does not enter into the profitable agricultural resources of a country where much of the commodity is in demand.

These facts would lead to one of two inferences: either that the summer of 1854 was behind the average of years; or that the climate of the southwestern portion of the Crimea, in its main features and mean temperature, resembles more closely that of Belgium or the south of England, that lie five degrees north of it, or the western or oceanic confines of Europe, than the plains of Lombardy and Central France, which are situated within its own parallels.

ART. 4.—*On London Milk.* By Dr. HILLIER.*(Dublin Medical Press, Nov. 19, 1856.)*

Dr. Hillier, the medical officer of health for the parish of St. Pancras, has the following interesting remarks in a recent report. "I have recently examined more than twenty different specimens of milk, and find that they vary much in character. Thinking it possible that the pooriness of the milk might be entirely due to the manner in which the cows were kept, I obtained milk direct from the cows at one of the most unhealthy sheds that I could find; and to my surprise, the milk, though not so good as country milk, was very far above the average of that sent out. There can be no doubt that the practice of adding water in large quantities is a very common one; the quantity employed is, I believe, from 25 to 50 per cent. The milk supplied to the workhouse was one of the poorest; instead of a gallon containing nearly 9000 grains of solid matter, it contained only 5425, or about two thirds of the proper quantity. As far as my researches have extended, it is not common to have any other ingredient added than water; this, however, is a fraud which ought not to be allowed. . . . It is to be feared that, in some cases, water is added by the dairymen, not only to dilute the milk, but also to hasten the separation of cream, so that they may be able to obtain some from the milk before it is sent out to be sold. Thus this most important article of diet is impoverished, not only by keeping the cows in an unhealthy state, but by the addition of water and removal of the cream."

ART. 5.—*On Calcutta Pork.* By —.*(Lancet and Dublin Medical Press, Dec. 17, 1856.)*

"Let any person," says a writer in the 'Ceylon Examiner' for October last, "at daybreak start from the gates of the Government House, Calcutta; and whether his walk be to the banks of the river, or to the banks of the canals which on three sides surround the city, he will see pigs feeding on the dead bodies of the natives that have been thrown there during the night; during the day the river police clear away and sink all that remain of the bodies. Bad as is the metropolis of India, it is nothing compared to Patna—hundreds upon hundreds of human corpses are there strewn along the strand; and fattening, Ghoulé-like, upon these are droves upon droves of swine. The swine are slaughtered, cut up, and salted into hams, bacon, and pickled pork, and then despatched to Calcutta. The great market for this poisonous swine-produce is the Mauritius and Bourbon, where it is foisted on the inhabitants as the produce of Europe. Moreover, as these swine are sold in Calcutta for three or four shillings each carcase, it is stated that the inferior class of homeward-bound vessels are provisioned with them, and thus this human-fed pork is introduced into Europe and America."

(B) ACUTE DISEASES.

ART. 6.—*The "Rose-spots" in Fever, and their metamorphoses.*

By Dr. ADDISON, Physician to Guy's Hospital.

(Dublin Medical Press, Dec. 3, 1856.)

In a recent clinical lecture, Dr. Addison directed the attention of his class to some well-marked cases of typhoid and typhus recently in his wards at Guy's Hospital. The observations of Dr. Addison are of peculiar interest, as they are the result of forty-four years' experience of these diseases, during which interval, he believes, the characters of continued fever in London, as observed by himself and Dr. Bright, have undergone a series of very remarkable changes. The evidence, according to Dr. Addison, is all in favor of Dr. Jenner's distinctions of typhoid and typhus being different species of fever, and not merely varieties of one and the same disease. But Dr. Addison has been so often astonished and deceived at the changes undergone by fevers, that he recommended his class as yet to receive the doctrines of Dr. Jenner as it were provisionally, in default of any more practical solution of the difficulty. The term typhoid is a bad one, and we cannot see that the term

rose-spots is happily chosen, any more than bronzed skin—a term never used by Dr. Addison for the disease of the supra-renal capsules.

In well-marked typhus, Dr. Addison singled out for his class several symptoms, which contrast very strongly with those of typhoid. Typhus comes on more suddenly, and prostrates the patient more completely than typhoid. The bowels in typhoid are generally irritated, and in a state of diarrhoea; whilst in typhus the bowels, almost as a rule, are constipated. Typhoid agrees more with the general characters of gastric fevers, while typhus symptoms are rather referred to the brain. Typhoid seems a more manageable affection than typhus; and while typhus is a highly infectious disease, typhoid is free from many of the dangers common to typhus, scarlet fever, and various members of the order exanthemata. Typhus agrees rather with what is popularly known as brain fever, where it is well to shave the head and to apply cold, but not to bleed; while typhoid (or ileo-typhus, as it is called on the Continent) is not, as surgically considered, a form of typhus, but a new disease, answering very much to the signs of gastritis or gastric fever.

When the disease now known as typhoid first made its appearance in London, Dr. Addison stated that he and Dr. Bright often mistook it for measles; but since then the so-called "rose-spots" have undergone an infinite variety of modifications. In some patients, it is well to remember, as has been most ably eliminated out of a mass of facts, by Stokes and Jenner, that the rose-spots are absent though all the other symptoms of typhoid are present. Of course, in typhus, we have the peculiar mulberry spots, and the skin is dusky. The pulse is not of any value as a diagnostic mark in either fever. In the case of B. D., a marked instance of typhus, now in Guy's Hospital, and with respect to which Dr. Addison gave some extended clinical remarks, all the symptoms of typhus are present. The poor woman has also coagulable urine, another very common phenomenon in typhus, caused perhaps by congestion of the kidney.

ART. 7.—Examination of the Urine during the whole course of Maculated Typhus, with the effect of Coffee upon the Excretion. By Dr. PARKES, Physician to University College Hospital, &c.

(*Medical Times and Gazette*, Feb. 28, 1857.)

The condition of the urine has been examined by several observers in typhoid fever, and some isolated analyses have been made in typhus, but no case has been examined so completely as that which is here recorded by Dr. Parkes. The results are very curious, and in part inexplicable. Still they are deserving of every attention; for, as Dr. Parkes says, we are likely to learn more about fever by a careful study of the excretions, than in any other way.

CASE.—On December 28th, 1856, a young man, æt. 17, was seized suddenly with headache, pains in the limbs, and shivering. He was seen by a surgeon, and took purgatives, but no other medicine. Admitted into hospital, January 2d.

6th day of disease.—Pyrexia great. Temperature of the mouth 130°; pulse quick; no local disease, except slight dry bronchitis. Skin covered with general mottled eruption; hue of skin, in addition to the eruption, darkish. Much headache and vertigo; some delirium; no abdominal symptoms; thirst.

7th and 8th days of disease.—Same symptoms.

9th.—Pyrexia great. Temperature 133°. Eruption on skin lighter in color. General hue of skin still dark from congestion. Head symptoms considerable. Action of skin, none; of intestines, slight. Tongue thickly coated, dry. Dry bronchitis almost gone.

10th.—Pyrexia same. Temperature 102°; pulse 104. Eruption disappearing fast. Headache less. Vertigo still great; thirst. No action of skin or of bowels. Tongue thickly coated; dry.

11th.—Pyrexia lessening. Temperature 102° at 2 P.M., falling at night to 99·5°; head symptoms much less. Eruption almost gone. Dark flush of skin much less. Pulse 98. Tongue much cleaner. No action of skin or bowels.

12th.—Pyrexia gone. Temperature 97·5°. Pulse 98. Eruption not quite gone. No head, chest, or abdominal symptoms. One stool after one drachm of castor-oil, bilious, and healthy-looking.

13th.—Pyrexia absent. Temperature 97·5°. Pulse 80. Tongue quite clean; eruption gone. Considerable muscular weakness and emaciation.

14th.—Well, except weakness. Temperature abnormally low—96°. Pulse 72.

17th.—Temperature still low—96°.

21st.—Temperature normal—98°.

Discharged on the 27th day.

On the 19th day, when he was first weighed, the weight was 129 lb. He was then gaining flesh; for on the 22d day he weighed 131 lb.

The diet, from the time of admission to the 12th day, was in each twenty-four hours,—

Beef-tea, Oj;
Milk, Oj;
Port-wine, ℥iij;
Lemons, ij;
Bread, ℥vj.

On the 12th day, wine increased to 6 ounces, and fish ordered.

On the 16th day, chop, more bread, and, in fact, good diet.

No medicine, except ℥j of castor-oil.

This is the case. The result of the examination, and the comments of Dr. Parkes, which are too interesting to allow of much abridgment, we give below:

"There was no doubt from the eruption, comparatively indistinct as it was, which was present on admission, that this was a case of exanthematic typhus. The characters of the eruption were—it was generally diffused over the whole body; it was made up of two parts, a diffuse mottling, and darker, more defined spots; like many early typhus eruptions, it faded so much under the pressure of the finger as almost, but not quite, to disappear; it was permanent after it appeared, although its duration was not long, *i. e.*, it was present on admission on the sixth day, and was gone entirely by the thirteenth; supposing it had appeared, as probably it did, on the fifth day, it had a total duration of eight days, being, however very faint during the last three of these.

"No other febrile disease could have given this eruption, and the diagnosis might have been fairly based upon it alone, but the correctness of the diagnosis was also proved by the progress of the disease. After a short and stormy course the disease terminated on the twelfth or thirteenth day without anything like the crisis of *relapsing fever*; and although the man was kept till the twenty-seventh day, it did not afterwards relapse. During this course there was no indication whatever of any intestinal affection; the abdomen was flat, soft, painless; there was no diarrhoea, but on the contrary constipation, and castor-oil had to be given. *Typhoid fever* was, therefore, rendered most highly improbable by these negative symptoms, *viz.*, the short course, the freedom from intestinal application, and the absence of typhoid eruption.

"*Febricula* is rarely attended by such severe pyrexial symptoms on the ninth and tenth days, and has never any eruption, except it may be the peculiar and uncommon 'blue spots.'

"The fever, therefore, was decidedly not typhoid, or relapsing fever, or febricula, and it was decidedly not caused by any *local disease*, for this would have been detected, and it was not caused by any of the *exanthemata*, which have their own eruptions. There can be no doubt, indeed, both from positive and negative symptoms, that it was typhus.

"We will consider now a little more closely the changes going on in the system, as far as we can yet learn them.

"During this disease the body was losing flesh rapidly; this was owing not only to diminished ingress of food, but also to increased egress of bodily structures in the form of excretory products. In other words, the metamorphosis of tissue, as judged of by the urine, was augmented.

"This case appeared to be a very good one for the purpose of examining the urine. It was uncomplicated, except with very inconsiderable dry bronchitis during the first two or three days after admission; there was no diarrhoea, and no difficulty therefore in saving the urine; the skin was always dry, so that the cutaneous action produced no disturbing effect on the water of the urine. We could not, in fact, have had a more favorable case. Fortunately, also, Dr. Ranke was able to examine the urine at the same time as myself; we have carefully compared our results, so as to be certain that no error has been committed.

"When the patient was first admitted he was in a state not requiring medicine; the bowels had been acted upon by purgatives before he entered hospital.

"He was put on the meagre diet already mentioned, and was allowed to drink as much water as he pleased.

"The following was the analysis of the urine, as far as it was made, for two days during the height of the fever, when no medicine whatever was given :

"In each Twenty-four Hours.

Day of Month.	Day of disease.	Temperature.	Action of skin.	Action of bowels.	Quantity of urine, oz.	Urea—grains.	Cl Na ₂ gra.	SO ₄ grains.
Jan 4—5,	8th	103° F.	Nil.	Nil.	26	522·67	traces	38·325
— 5—6,	9th	103° F.	Nil.	Nil.	27	542·00	traces.	39·673

"From this table the following inferences can be made at once :

"1. In spite of the patient's thirst, and of a large quantity of fluid being drunk, several pints in fact, a small quantity of water left the system by the kidneys and skin, and none at all by the bowels. The constant hot dryness of the skin was present whenever the patient was seen, day or night, by the nurse, by my assistant, or by myself. This retention of water is a most remarkable fact in the history of pyrexia. It is not peculiar to typhus, but is common to, though not constant in, that large class of diseases characterized by increased temperature of the body. Its cause is quite unknown.

"2. The amount of urea was greatly increased. The normal amount of urea excreted by active men on good diet, between twenty and forty years of age, and weighing 145 lb., is 31·82 grammes, or 491 grains, in twenty-four hours; each pound of the body excretes in that time 3·37 grains. Now, this boy, aged 17, weighing certainly not more than 129 lb.—for ten days after, when he was recovering, he weighed that amount—excreted daily no less than 532 grains, or 34·5 grammes, viz., at the rate of 4·12 grains for every pound weight, though he was on fever diet, and was taking scarcely any nitrogenous food into the body. After the fever had disappeared, from the nineteenth to the twenty-seventh day, with good diet and some exercise, the average excretion of urea was 415 grains; and this was probably nearly his normal excretion. As he weighed about 131 lb. at this time, it would give 3·16 grains to each pound, or nearly the normal amount; and thus, during the pyrexial, as compared with the healthy period, each pound of the body excreted urea in the ratio 4·12 to 3·16, or almost exactly one quarter more, viz., as 100 is to 76½.

"3. The chloride of sodium, instead of being, as in health, upwards of 180 grains per diem, was present only in traces; the amount was too small to be determined. Now, here was no pneumonia, no diarrhoea, as in typhoid fever, the stools of which contain chloride of sodium in some quantity; no sweating, as in rheumatism, which could carry off the chlorides. To what was the disappearance owing? Not altogether to the starving diet; for, if chloride of sodium be totally abstained from, it is a long time before it totally disappears from human urine; and, besides, the diet in this case did contain a considerably quantity of chloride of sodium.

"This retention is not peculiar to pneumonia, but, as I have pointed out in the Gulstonian lectures for 1855, is common, like the retained water, to the pyrexial condition, though it is not constant, nor always seen to such an extent as in this case.

"4. The sulphuric acid was supposed, like the urea, to be greatly increased. The normal excretion in adult males is 28·74 grains or 1·862 grammes in twenty-four hours; whereas this boy on a spare diet passed 39 grains 252 grammes on

an average of the two days. Yet after the fever was over, the amount of sulphuric acid did not fall. On the twenty-fourth day it was 44 grains, so that perhaps it may have been normally great in this boy.

"5. The amount of the other ingredients was undetermined. This, then, was the waste caused by the fever; although the diet was so poor and no exercise was taken, about 100 grains more of urea were daily excreted than in the state of health; i. e., metamorphosis was more active by one-fourth.

"Having now fixed the amount of excretion produced by the fever, I determined to try, while the fever was still at its height, an experiment, and to give the patient a strong infusion of coffee. There was no necessity to give any other medicine; had there been, of course we could not have noted the effect of the coffee.

"The reasons for trying the effect of the coffee were these. It would seem, from the investigations of Bucker and of Julius Lehmann, that coffee has an extraordinary power of delaying the metamorphosis of tissue in health; under its use, the urea, the phosphoric acid, and the sulphuric acid alike diminished. It also produces another well-known effect; viz., it excites powerfully the nervous system.

"Now here we seem to have the very qualities wanted in an anti-febrile medicine for typhus; viz., a nervous excitant, and an arrester of metamorphosis.

"I have given coffee in two cases of typhoid fever; in one, with apparently the same result as in health; viz., diminution of urea: in the other without this effect. The present case seemed well adapted for the trial.

"Accordingly, during two days (tenth and eleventh), at the very height of the fever, the patient took during one day 7½ ounces, and during the other 6 ounces of an infusion of coffee. The two quantities of coffee each contained 60 grains of extract of coffee; i. e., when evaporated to dryness they each yielded 60 grains of pure extract, which dissolved again completely in warm water. 120 grains of extract were thus given in the two days.

"The result was as follows:

"In each Twenty-four Hours."

Day of month.	Day of disease.	Temperature.	Action of skin.	Action of bowels.	Quantity of urine—ounces.	Solids—grains.	Urea—grains.	Cl Na—grains.	SO ₂ —grains.
		102° F.	Nil.	One loose stool; no urine with it.	41	906·0	723	Traces.	44·813
	11	102° F.	Nil.	Nil.	36	706·8	516	Traces.	34·160

"The effect of the coffee was therefore very different from the effect in health. There was a large increase in the water, and, as the patient did not drink more, this was remarkable; the urea was greatly increased, instead of being lessened; the average of the two days being no less than 619 grains; the sulphuric acid was not diminished, its average being 39·48 grains.

"The coffee did not, then, in these doses lessen metamorphosis, yet the patient stated that he felt very much better; the headache disappeared, and the pulse became fuller and slower. Perhaps, we ought, in so severe a pyrexia, to have given more coffee; this amount may not have been enough. The experiment is not conclusive against the use of coffee; it only shows that this amount did no good.

"The coffee having been left off, we gave no more medicine, but continued to examine the urine. On the day after the coffee was left off, the pyrexia came suddenly to an end; the temperature fell to 97·5°. On the fifteenth day, it fell below the normal, viz., to 96°, and rose to the healthy amount of 98° on the twentieth or twenty-first day of disease.

"Continuation of Examination of Urine in each Twenty-four Hours.

Day of month.	Day of disease.	Temperature.	Action of skin.	Action of bowels.	Quantity of urine— —ounces.	Solids—grains.	Urea—grains.	Uric acid— —grains.	Cl Na—grains.	SO ₂ —grains.
9	12	97°5	Nil.	1 stool after 5j of castor oil.	33	—	521	—	Traces.	38·52
10	13	97°5	"	1 stool.	31	715·48	519	—	"	36·19
11*	14	—	"	Nil.	27½	714·	526	7·391	"	39·40
12*	15	96°	"	"	27½	714·	526	7·391	"	39·40
13	16	—	"	"	21	—	516	—	"	—
14	17	96°	"	—	30	—	531	—	"	—
15	18	—	Trifling.	Normal.	50½	—	507	—	Traces; but more.	38·50
16	19	—	—	—	46	—	418	—	Rather more.	—
17	20	—	—	—	24½	—	344	—	"	—
18	21	98°	—	—	32	—	336	—	"	—
19	22	—	—	—	39	—	401	—	"	—
20	23	—	—	—	40	—	459	—	172·31	—
21	24	—	—	—	56½	—	432	—	162·12	44·03
22	25	—	—	—	60	—	488	—	172·31	49·60
23	26	—	—	—	46	—	—	—	165·05	37·14
24	27	—	—	—	56	—	442	—	174·00	—

"On looking at this table it will be seen that the excretion of urea continued great till the 18th day of disease; it then fell very considerably for four days, and then, as perfect health returned, rose again to some extent.

"There is a singular uniformity in the excretion of urea, from the first day it was examined, viz., on the 8th day of the disease, to the 18th day. Taking away one day, when coffee was given, and when 723 grains was excreted, the average was 522 grains in each twenty-four hours of these ten days, and the extreme range on either side of this average was only 35 grains; i. e. the lowest amount was 507 grains, or 15 below the average, and the highest was 542 grains, or 20 above the average.

"In spite, then, of the difference of temperature between the 8th and the 17th day, in spite of the changed diet, the metamorphosis of tissue proceeded with an extraordinary regularity up to the 18th day. There could not have been any disturbing causes, but each day, within a few grains, the same amount of urea was excreted.

"Then on the 19th day, after the temperature had been below the normal for several days, the urea fell to what is probably its natural excretion in this man; in the following nine days (19—27 inclusive) it averaged 415 grains, or 107 grains less than in the former pyrexial period.

"It was lower on the 19th, 20th, and 21st day, than afterwards, for the man was eating largely during the latter period; but its highest amount on any of these days was 488 grains, or 34 grains less than the average of the pyrexial period, and 235 grains less than the highest amount passed during the pyrexia.

"Is it not very extraordinary that the high range of the urea was kept up after the temperature had fallen? This is certainly not what occurs in many pyrexial cases, for the excretion of the urea and the sulphuric acid follows closely the changes of the morbid heat. I think we must wait for other cases to give us so clue to the fact that the metamorphosis of tissue, as expressed by the urea, is equal from the 12th to the 17th day, to that of the 8th to the 12th day, while

* On these days the urine of forty-eight hours was collected and analyzed; it has been divided into two equal parts for the two periods of twenty-four hours.

temperature was five degrees less during the former period. Why did not this increased metamorphosis keep up the febrile heat? Was there some rapid decomposition or disintegration from the 8th to the 12th day, giving rise to febrile heat, and then after this was there merely conversion into the urea of substances half-oxidized, which, during the febrile period, had been taken up from the tissues and poured into the blood, and whose further change into urea was not attended by the evolution of heat? These are curious questions, which require more facts for their solution.

"Another remarkable point in this case is the continued absence of the chlorides long after even the urea had commenced to fall in amount. The man was on good diet and taking plenty of chloride of sodium, the fever had ceased, and yet scarcely any chloride passed off by any channel. Where and why was it retained? Had the system been drained of it before in any way? The boy had not been well previously; he had had scarlatina three or four weeks before, but we have no reason to think the chlorides would be affected in this way by that disease. Almost suddenly, on the 20th day, the excretion of the chloride of sodium commenced, and averaged for the next four days, while he remained in the hospital, 169 grains daily.

"The water of the urine was increased after the period when the urea fell—contrary to what occurs in many cases it was inversely as the urea, thus:

	Average of water in 24 hours. Oz.	Average of urea in 24 hours. Grs.
In the four days, during augmented temperature.	32.5	575
In the seven next days, with low temperature, with increased urea,	31.4	521
In the healthy period, with normal temperature, nine days,	44.4	415

"I must briefly notice some other points about the urine.

"The uric acid was, no doubt, in excess like the urea. There was a great deposit of urates. This would not, *per se*, prove anything; but they occurred in dilute urine, which was scarcely acid; and after a very great sediment had fallen, the urine was still so rich in uric acid that a drop of acetic or other acid threw down a most copious precipitate of amorphous uric acid. The amount was determined only once; on the 14th day, after the pyrexia had gone, it amounted to 7.391 grains in twenty-four hours, or almost the average of health.

"The free acidity of this urine was very small till the 19th or 20th day. On the 9th day of disease the acidity of the whole twenty-four hours was only equal to 18 grains of crystallized oxalic acid, whereas the healthy acidity is equal, according to Winter, to 36.67 grains, and according to Vogel to from 31 to 62 grains of crystallized oxalic acid. Afterwards the urine was scarcely acid, was almost neutral in fact, till the 17th day, when it evidently became much more acid, though the exact acidity was not determined.

"What makes this the more remarkable is, that in many febrile diseases the acidity is much increased.

"Was it an exceptional thing in this case, or is this common in typhus?

"Another point about this urine was that its color was comparatively light. In fact, if you look at the relative amount of the total solids, as determined by evaporation, and at the urea, and then remember that there is potash to be added to the sulphuric acid, and phosphates and urates to be also taken into account, you will see that the amount of pigment and extractives could not have been great in this case. They must, indeed, have been lessened in amount.

"I have noticed this before in some cases of true typhus, and it is a point of distinction between it and typhoid in some, though not in all cases.

"Is, then, the disintegration of blood-corpuscles, which is now supposed to give rise to urine pigment (eventually, if not directly) lessened in typhus, instead of being augmented, as in rheumatism, pneumonia, and some other febrile diseases?"

Albumen was never present in this case, though in many cases of typhus it appears at some period or other.

ART. 8.—*On the forms of Remittent Fever prevalent in London.* By Dr. PEACOCK, Assistant-Physician to St. Thomas's Hospital, &c.

(*Medical Times and Gazette*, March 21, 1857.)

From the writings of Sydenham, Morton, and others, we learn that during the sixteenth and seventeenth centuries fevers of a remittent or intermittent type were extremely common in London, and occasioned a large amount of mortality. In the middle of the last century we are informed that those affections were no longer generally prevalent, but only appeared epidemically in peculiar seasons and under unfavorable atmospheric conditions; and, at the commencement of the present century, they had become still less common, so that they were very seldom seen in persons resident in the metropolis, though still prevalent in the adjacent districts.

At the present time the cases of intermittent fever which occur in town are most commonly in persons who have returned from marshy neighborhoods, either quite recently or within a few months; but the malarious influence in the metropolis itself, is sufficiently powerful to imprint a periodic character upon various local affections, and occasionally to give rise to fevers of a remittent type. Recently, and especially during the last autumn and winter, affections of the latter kind have been unusually prevalent.

Symptoms.—The most common form of remittent fever is that in which the symptoms assume at first a continued form, but in which, after a time, more or less marked exacerbations and remissions occur; or in which, after paroxysms of an aguish character, the symptoms of continued fever supervene.

The commencement of this form of fever is generally sudden, the patient being seized with rigors, followed by heat and sweating; but in some cases the disease advances gradually and insidiously, and its nature only becomes apparent after some time has elapsed. The attack is generally characterized by the occurrence of exacerbations or remissions occurring once or oftener in the day, on alternate days, or at longer and irregular intervals. Sometimes, while there are slighter exacerbations occurring every night or every other night, there are more serious relapses, which take place at intervals of twelve or fourteen days, and after the patient has to a considerable extent recovered his strength. The exacerbations generally commence with some feeling of faintness, cold, or decided rigors; the surface of the body becomes cool, and the extremities cold and livid; the pulse is feeble, sometimes intermittent, and generally there is nausea or retching and vomiting. After a longer or shorter time reaction ensues, the skin becomes warm and occasionally pungently hot and dry; the face is flushed, sometimes extremely turgid; the pulse is quick, full, and bounding, and there is restlessness, headache, and delirium, with vomiting or diarrhœa. After five or six hours these symptoms subside, the skin becomes moist, and then profuse and often protracted perspirations break out, the pulse falls both in force and frequency, and the patient is left greatly exhausted. The symptoms vary, however, both in character and intensity; the first and second stages are sometimes very imperfectly marked, and there is little to indicate the exacerbation except the increased fever, restlessness, or delirium at night, and the tendency to perspiration in the morning. Except during the exacerbations, the symptoms of fever are not ordinarily intense; the pulse is usually only moderately quick; the tongue, though coated with a thick fur, does not generally become dry or brown, or is so only during the exhaustion following the paroxysms; the skin is warm and moist, not generally very dry or harsh; the mind remains clear, or is but slightly affected, and though the prostration of strength is great and rapid, it is usually not of long duration. There is, however, very generally a great tendency to complication with disorder of the liver, shown by the occurrence of jaundice, pain or tenderness in the right hypochondrium, and bilious vomiting or diarrhœa; with rheumatic symptoms; bronchitis or pneumonia; and occasionally towards the end of an attack, with purpurous eruptions on the skin, and discharges of blood from the mucous membranes, especially of the bowels or kidneys, and albuminous urine.

Dr. Grant, writing on the epidemic diseases of London, about the middle of the last century, well describes this form of fever, under the name of "fever and ague," or "unformed ague," as he had observed it in certain malarious districts of the Continent during autumn, and in particular seasons in London, "when there is an

agueish epidemic constitution and frequent northerly or northeasterly winds." At the present time it is certainly not by any means of common occurrence in the metropolis, and is chiefly observed in persons who have come recently from marshy districts of this country, or who have returned from some tropical climate in which intermittent or remittent fevers are endemic. Occasionally, however, it is seen in persons who have been for some time resident in the metropolis or its immediate neighborhood, in districts not usually productive of malarious affections, and in persons whose social position generally grants immunity from such diseases, and, as I before said, this has been especially the case recently.

Of the dependence of this form of fever upon the same causes which give rise to ague there can be no doubt. Various authors, more especially the writers upon the diseases of the army and navy, and more particularly during the wars in the Low Countries, at the earlier part of this and in the middle of the last centuries, describe the epidemics as losing in the autumn their intermittent and acquiring a remittent character, and again returning to the former type with the advance of winter; and similar observations have been made in marshy districts of this country. Generally, this tendency has been ascribed to the greater intensity of the paludal miasmas during autumn, or to the greater susceptibility of individuals to its influence, from having been only recently exposed. In London, however, at the present time, the production of remittent fever seems rather due to the operation of the ordinary causes of fever upon persons predisposed to ague, than on any special intensity of the malarious influence; thus, the most common exciting causes are either great destitution, to which the subjects of the disease have been exposed, and which has subjected them unusually to the influence of the weather, as by sleeping in the open air; or their having committed great and prolonged excesses.

The mortality which is occasioned by this form of fever is less than from the severity of the symptoms would be anticipated, and the patient usually recovers his strength more rapidly than after attacks of true continued fever. Dr Peacock has, however, met with two cases in which the disease proved fatal. Of six well-marked cases of which he possesses notes, and which terminated favorably, the convalescence was established on the 13th, 14th, 18th, 19th, 22d, and 23d days from the commencement of illness, and in seven cases the patients were discharged from the hospital—

On the 5th day from admission, and the 19th from seizure.			
" 15th	"	19th	"
" 16th	"	19th	"
" 19th	"	21st	"
" 24th	"	28th	"
" 33d	"	61st	"
" 40th	"	42d	"

Of the two cases which proved fatal, one died on the 6th day from admission, and 27th from seizure; the other in the ninth week of illness.

ART. 9.—*Remarks on the study of some Epidemic Diseases.* By Dr. MILROY.

(*Lancet*, Nov. 15, 1856.)

Like many other phenomena in nature, the origin and development of pestilences are involved in obscurity. We are ignorant of their immediate and efficient cause, —the *materies morbi*,—and of the circumstances which lead to their occasional and temporary outbreaks. They come and go, but the why and the where we can neither predict nor explain. If we had accurate tables of the geography and chronology of epidemics over a multitude of years, and different countries and continents, light might possibly be thrown on several problems in their history. Mr. Wilde, of Dublin, has recently set an excellent example in this direction, in Part V of the Census Report of Ireland. Again, by carefully comparing the features of different pestilences together, our knowledge might be much advanced. One of the chief objects of the present paper was to apply this principle of examination to plague, yellow fever, and cholera. The admirable works published during the last ten years on each of these diseases enable us to do this with much greater exactitude than previously, viz., the Report of the French Academy on Plague and Quarantine; the Reports on the Cholera Epidemic of 1849 by the General Board of Health, the

Registrar-General, and the London College of Physicians; and the Report of the Sanitary Commission of New Orleans on the Yellow Fever of 1853. The monographs of Dr. Burrell on the Malta Plague of 1813, of the Government Commission on the Bermuda Fever of 1853, and of Dr. M'William on that of Boa Vista, are highly valuable; and the Report on the Cholera in Jamaica contains much reliable information. The facts related in these works prove that outbreaks of these three pestilences have very generally not been such sudden events as has often been imagined, but have been preceded by very noticeable signs, either in the type or prevalence of the endemic diseases, or by unusual meteorological conditions. This was strikingly exemplified in the history of the plague in Malta, of the yellow fever in Brazils, and of the cholera in this country. The season of the year at which the three pestilences have generally occurred in force has been nearly alike, viz., the period between July and November. In this respect they differ remarkably from the exanthematous fevers, and also from typhus, which in this country at least are most frequent and fatal in the colder half of the year. The meteorological phenomena which have usually accompanied the full development of the three pestilences have been very similar. Perhaps the most uniform peculiarities have been a stagnant condition of the atmosphere, and irregularity and unusual direction of the winds before and during their prevalence. The commencement and rise of these diseases have generally been obscure, their characteristic symptoms being often indistinct at first. Cases of plague are without buboes and carbuncles, of yellow fever without the marks of hæmatic dissolution, and of cholera without cramps or decided collapse. Notwithstanding this uncertainty, it is of first-rate importance to ascertain and record with exactitude the precise dates and localities where the earliest recognized cases of a pestilence occurred. Without this knowledge, ascertained beyond all dispute, it is impossible to reason correctly as to its origin and spread. Medical records have hitherto been exceedingly defective upon this head; and until habits of more accurate observation and notation are acquired, it is in vain to look for a solution of several problems in epidemiology, and, amongst the rest, as to the part which contagion or infection plays in the primary introduction and subsequent spread of epidemics. It is also very necessary to study with attention the various predisponent and favoring agencies of epidemic evolution and diffusion. Amongst these, local atmospheric impurities, arising from nuisances on or below the surface, or from overcrowding in ill-ventilated apartments,—humidity, whether of the atmosphere, or of the soil or subsoil on which a building stands,—and elevation, not only of an apartment above the surface of the ground, but also of the site above the level of the sea or of the surrounding land, are especially worthy of notice. By diligently attending to these influences, along with due regard to the quality, &c., of the ingesta, the foundation of preventive and prophylactic measures is to be laid. The paper concludes by an earnest recommendation that in the army and navy it should be an invariable rule to increase the amount of breathing space at night for the men before an epidemic disease has manifested itself, and whenever there is the slightest ground to apprehend the coming danger.

ART. 10.—*On the therapeutic effects of Charcoal in Epidemics of Measles and Cholera.* By Dr. WILSON, Colonial Surgeon, New Zealand.

(*North American Medico-Chirurgical Review*, Jan., 1857.)

The following remarks are taken from a report to the Government for the year 1854. Dr. Wilson says:

"Throughout the course of the epidemic (measles), I never observed diarrhoea to be beneficially critical, but otherwise; and as invariably induced either by imprudent exposure in the early stages of the disease, by sudden check to perspiration; or, when the state of the patient, or unavoidable circumstances, came in the way of promoting a perspirable state of skin. Hence, I never hesitated to check the laxity by such correctives as had also a sudorific tendency; and of these I found none so efficient as the ordinary wood charcoal in powder, though, had the preparation been within my reach, I should have preferred it as of more efficacy."

Then, after some remarks upon the use of charcoal in dysentery and yellow fever Dr. Wilson proceeds:

"Until the summer of 1834, no opportunity offered to me of researching further

as to the worth of *charcoal* administered internally. But, in that season, I happened to be a sojourner in that city of Andalusia, called Jerez, at the time it became subjected to a violent outburst and overspread of cholera—a disease, I may remark, I had rather longed to see in its epidemic form, and in that fierce instance of its workings, I may verily say, I was greatly more than gratified.

"I was not, at the time of the occurrence, residing in Jerez in a professional capacity; but, under the strange circumstance that some of its *medicos*, early in the epidemic, *absconded* therefrom, and that, to meet the dire exigency of the visitation, not the tithe of an adequate number remained behind, it was no time to be simply a looker on. Accordingly, I proffered my services to the Government authorities, and an hospital being put under my charge, I had now, and in all ways, ample opportunity of acquiring some knowledge of the disease. By a reference, then, to my notes of that period, I may here introduce some detached remarks therefrom, relative to the use of *charcoal* in it, whether employed as a prophylactic or as a remedial agent.

"In the early part of the first stage, where there is only some anomalous feeling of *malaise*, attended with slight laxity of bowels, and which has obtained among the Spaniards the name of *colerina* or little cholera, a few doses of Lavitz's *prepared charcoal*, both by the mouth and by enema, and the exhibition on the succeeding day of an oil laxative, and living cautiously for a few days, are sufficient means, generally, to check the further advance of the disease.

"Throughout the first stage of formal attack, when I could prevail on my patients to take *charcoal*, it was administered; but many objected to take it by the mouth, and it was not with the multitude I could insist, since I could not compel obedience, neither give time to superintend its necessarily frequent administration, nor place reliance on the quantity or *quality* given. From repeated experiments on myself and others, I am well assured that the latter is of considerable consequence, the remedial power being much deteriorated by exposure to the air. Therefore, it should not only be very carefully prepared, but be kept for use in accurately stoppered bottles or phials. I would further observe that, hitherto, I have always used the charcoal prepared from the olive-root, which is a compact, hard wood—not, however, from choice, but merely from its being that which most conveniently offered. But I consider it as not improbable that experience may detect a difference of medicinal quality in opposite sorts. Thus we see gunpowder-manufacturers adopt, as giving strength to their compound, charcoal made from the willow and such light woods. Hence, we may argue that, if levity indicates, in the composition of that, a superiorly energizing effect, so may the charcoal of the willow, cork, or sponge, be found to be superiorly efficacious, as a medicine, to that prepared from the heavy woods."

"As a prophylactic, after the publication of some instructions to the people, the charcoal gained a speedy and extraordinary reputation; and some of the blacksmiths, who got from me the mode of preparing it in large crucibles, acknowledged to the gain of seven and eight dollars a day by retailing it in small quantities to the multitudes of applicants. But, without having once tried whether it had or had not virtues, all my *confreres* were doggedly opposed to its administration; and much of the people, in some degree influenced, but greatly more from the novel, yet homely character of the article, as also from the required largeness and frequency of the dose, could not readily be brought to rely confidently on it as a remedial agent in so hurrying a disease. Ultimately, therefore, when, from the general explosion of the epidemic over the city, I was obliged to post from patient to patient, or rather from house to house, and to square, and lane, and street, it was only in very occasional cases that I could continue its use by the mouth. But from first to last, I persevered with, and met no balking to, its employment in the form of *clyster*. But it was given also, in numerous cases, by the mouth, and with such general good effect, as to have impressed me with the firm conviction, that, in all stages of the disease, it is a most beneficial adjuvant, and anterior to the asphyxial stage, and in that of reaction, most eminently curative.

"It may possess a specific febrifuge power or quality, but I am disposed to ascribe its virtues to its general antacid and absorbent property, and no less to its controlling and corrective power over all ferments—vinous, ascenscent, and putrefactive. Hence, as it was my belief that foul, morbid fermentation in the stomach

nd bowels, was one of the most constant symptoms, and not the least of aggravating causes in the progression of the disease, I could see nothing more likely to correct and mitigate it than the agency of this medicine, and more so, as I found that, by restricting my patients to the use of those articles the least liable to run into the fermentative process, as *e. g.*, rice water, linseed tea, and unleavened cakes or biscuit, were the most likely to effect a cure: while, on the other hand, inattention to such dieting, or deviation therefrom, were the most certain means of both accelerating and aggravating the disease.

"Generally speaking, Spaniards are very averse to *post-mortem* examinations; but the hospital which I superintended, together with, at that sad time, the almost utter regardlessness of the living as to what became of the dead, afforded me every facility; and I availed myself thereof as often as my professional avocations would permit. And in corroboration of the opinion that a fetid, fermentative state of the intestinal contents has greatly to do, if not in promoting, certainly in aggravating, the disease, I can affirm that, invariably, I found these, notwithstanding the gallons of watery fluid that had passed off during the course of the disease, most offensively feculent, and not unfrequently remarkably scybalous. I do not, of course, advance this last circumstance as extraordinary, supposing as we may, that the fluids of the system poured into the alimentary canal, acted thereon simply as saline purgatives often do in dropsies, in the autopsies of which disease we often find impactions of scybalæ of very old date. Thus, in such, on one occasion, I was present at the detection of the seeds of the prickly pear, which, it was accurately ascertained, had been eaten six months before, notwithstanding that saline purgatives had repeatedly been used intermediately. But the important inference to be drawn from the circumstance of the retention of putrid feculent matter, and viewing this as the pabulum, is the necessity that exists of administering oily laxatives during the stage of reaction, or, at latest, so soon as that begins to abate; for I found, until I adopted this plan of treatment, that my cases of relapse were frequent, and not unusually fatal. But, what experience and *post-mortem* autopsy proved to me, could not be made alike obvious to my patients. Accordingly, I met with much, and very often fatally-ending opposition to this evacuating practice, as they could not be made to comprehend how a disease of so untowardly diarrhœic a character, was to be otherwise than deteriorated by the administration of laxatives.

"I have never had an opportunity of using *bone charcoal* internally, but from its ascertained superior powers as a deodorizer, I consider that it deserves to be tested by experiment in such affections as I have here indicated.

"I may add, in conclusion of this short notice regarding charcoal, that during the course of the Jerez epidemic now observed on, I was affected repeatedly with premonitory symptoms, and once to the degree of what, as already observed, was denominated by the Spaniards *colerina*. But, on every one of these occasions, I derived almost immediate relief from a dose or two thereof; and thus, no doubt, I escaped the endurance of a more formal attack.

"Taken daily as a prophylactic, the only inconveniences complained of were its sudorific and constipating effects."

ART. 11.—On *Hæmaturia* after *Scarlet Fever*.

By Dr. BASHAM, Physician to the Westminster Hospital.

(*Lancet*, April 4, 1857.)

Hæmaturia after scarlet fever is no uncommon occurrence; it is always associated with more or less of general dropsy, with a pasty, spanæmic appearance of the surface of the body. In the great majority of cases, it is a morbid condition perfectly manageable, quickly yielding to judicious treatment, and only in exceptional cases either leading to, or associated with, permanent and organic mischief of the kidneys.

A question of much pathological interest arises out of the study of these cases, namely, whether the congested or impeded state of the circulation in the kidney mainly dependent on arrested cutaneous function during the desquamation of cuticle, or is it evidence of the imperfect elimination of the febrile poison during the eruptive stage, and therefore a sequel to the completion thereof through the excretories—the kidneys. From whichever point of view we study these

toms, the condition of the kidneys is that of inflammatory congestion, and the impeded renal function demands the same remedial measures.

Of the many cases of hæmaturia and dropsy after scarlet fever that come under treatment, some have had the exanthematous fever most favorably, and its characteristic stages have been well marked, but during convalescence, have been incautiously exposed, and the proper precautions, with respect to clothing at that period, have been neglected. In these there is some show of probability that arrested cutaneous function may suffice to explain the sequelæ of dropsy and bloody urine. But, in the vast majority of cases, this secondary condition must be accepted as evidence of the imperfect elimination of the febrile poison during the antecedent exanthematous stage, arising either from the greater intensity of the poison, or the incompleteness of the processes by which it is released from or decomposed in the system.

The amount and duration of hæmaturia, as a secondary affection after scarlet fever, is very variable. In some cases the renal hæmorrhage is abundant, and gives to the urine, for some consecutive days, a marked blood-red appearance; in others the presence of blood is scarcely recognized, except by a certain dusky appearance, as if a few grains of soot had been added to the urine. Nevertheless, whether the hæmorrhage be trifling or abundant, there is always at the commencement of this supplemental stage evidence of more or less febrile disturbance, clearly expressing the inflammatory nature of this secondary process. Anasarca of greater or less degree of the whole surface of the body, sometimes with, more often without, serious accumulations in the abdominal cavity accompanies, most frequently precedes, the hæmaturia. The pale, pasty, spanæmic aspect of the patient is also very expressive of this disorder.

CASE.—John D—, ten years of age, admitted into Burdett ward, in August, 1855. This child had scarlet fever the first week in August, and from the mother's description, the eruptive stage was passed favorably, there being, however, troublesome sore throat, with external swelling of the neck. By the 14th of August, however, he appears to have been quite well. A few days since, however, his face and eyelids were noticed to be swollen in the morning; and, on admission the following symptoms were recorded:—The whole surface of the body is anasarcaous, more evident in the face and hands, and wrist, feet and ankles, than on the trunk; the abdomen is distended, dull on percussion at the flanks, and affords evidence of fluid by succussion. The temperature of the skin is higher than natural; the pulse is small and frequent; the tongue pale and furred; the chest affords no evidence of disturbed function. The urine which has passed since admission is of a dark, blood-red color, highly albuminous by heat, and the sediment, under the microscope, exhibiting abundance of large-sized fibrinous casts, entangling blood-disks, and many free corpuscles. The little patient complains of thirst, loss of appetite, and urgent aching pains across the loins. The lumbar spaces are painful on making deep-seated pressure. He was ordered to be cupped to six ounces from the loins; to take half a drachm of the compound jalap powder; to have a warm bath each night; and to have the diaphoretic mixture every four hours, the action of which was to be promoted by the child being clothed in flannel. The little fellow bore the cupping without flinching or crying; and two days after we find the swelling in the abdomen greatly reduced, and the general anasarca of the surface diminished. There is less heat of skin: the pulse is fuller and slower; there is no thirst; the tongue is clean; and there is some desire for food. But the urine is still highly charged with blood; and the pain across the loins remains much about the same. Brisk purging with the jalap and cream of tartar was continued; and by the end of the week a very manifest improvement became apparent. The amount of urine began to augment in quantity, as soon as the action of the purgative ceased; but the hæmaturia continued, although less abundant. He was now dry cupped over the loins, and with considerable and immediate relief, indicated by the abatement of the pain, and the clearer and more natural appearance of the urine. Its specific gravity was ascertained to be 1.016. The dropsy by the tenth day from admission had nearly disappeared; the abdomen was natural and free from any indication of fluid; and the only vestige of the anasarca was some slight puffiness of the eyelids in the morning. The heart had been examined from time to time, and found free from any murmur. The urine at this period, under the microscope,

showed fibrinous casts, with a few epithelial cells entangled therein; there were also a few scattered blood-disks. The appearance is well illustrated in a drawing made at the time; the casts are all large sized, very granular, and within this mould, as it were, are many epithelial cells. Another drawing was made from the examination of the urine, when the child was first admitted, and there the casts are of the same character, with this difference, in these latter only blood-disks are visible; none of the granular epithelial cells of the tubes are visible; so that it would appear that, in the early stage, the microscope reveals a state of simple hemorrhage, the casts of tubes being the blood coagulated within them. Later in the disease an exudation of the epithelium of the tubes becomes abundant, and may, if unchecked, lead to serious embarrassment of the renal function, and permanent organic mischief in the kidney. With good management, however, this condition may be averted.

By the fourteenth day material improvement had been effected; all traces of dropsy had disappeared. The appetite was good; no thirst; amount of urine natural, but it was still albuminous. There was, however, that peculiar pallid look, that evidence of an impoverished state of the blood, which is so universal in this disease, and which tells so forcibly of the morbid agencies that, from the primary exanthematous fever to the secondary febrile state with renal hemorrhage, had been continuously deteriorating this fluid in its most important constituent of red globules that the propriety and even necessity for the administration of chalybeate medicines must be apparent. He first took the citrate of iron; but a week afterwards the urine continuing albuminous, and the microscope still exhibiting blood-disks and fibrinous casts, this form was changed for the tincture of the sesquichloride which he took for a fortnight in ten-minim doses. It cannot but have been remarked by you how rapidly the child improved in appearance; how soon, after taking this most valuable of all the preparations of iron, his countenance, and the surface of the body generally indicated an improved quality in the circulating fluid. Before he left the hospital we had the satisfaction of finding that the urine was quite free from albumen, and that beyond a few isolated and scattered epithelial cells the urine presented no morbid state under the microscope.

"I have," Dr. Basham proceeds, "only a few words to add respecting the period at which in these cases it is proper to put the patient on steel medicines. Your best guide is the presence or absence of febrile disturbance; so long as there is thirst, anorexia, a quick pulse, and hot skin, febrifuge medicines and local depletion are clearly indicated; but with the subsidence of these, no time should be lost before the influence of ferruginous remedies should be tried, and generally in these cases of renal hemorrhage and albuminous urine you will find the sesquichloride the most efficacious and best adapted for this class of disorders.

"This case has illustrated the chief features, both of symptoms and treatment, of the hæmaturia and dropsy after scarlet fever. They may be summed up as follows:—Anasarca of the surface, ascites, scanty urine, renal hemorrhage, albuminous urine, with symptoms of febrile disturbance. The principles of treatment were to alleviate the local congestion and impeded function of the kidney; to lessen the febrile excitement; to promote the action of the skin; and for a time, while the inflammatory congestion of the kidneys continued, to husband the renal function, and by active hydragogue purges to cleanse the system of the accumulated fluid which the embarrassed kidneys were inadequate to excrete; and, lastly, when these results had been favorably accomplished, to supply the functions of assimilation with a constituent all-important to the impoverished blood, and which, co-operating with animal food and well-regulated diet, soon carried the little patient to a satisfactory convalescence."

(C) CHRONIC DISEASES.

ART. 12.—*Salt in Intermittent Fever.* By Dr. MOROSCHKIN.

(*Smith's Jahrb.*, No. 6, 1856.)

Dr. Moroschkin observes, that during the prevalence of scorbutus and ague in Transcaucasian province of the Black Sea, quinine sometimes entirely loses its powers. When no very prominent scorbutic affections were present, he ad-

tered 1 oz. of salt in water, in two doses daily, during the absence of the apyrexia. In patients in whom the paroxysms were incomplete, very abundant sweating followed, the skin resumed its normal appearance, and the various other signs of amendment followed, the disease becoming cured in a few days, and the dose having to be diminished. In cases in which the improvement was only partial, quinine now became more efficacious. Of 103 cases 70 were completely cured, and the others ameliorated.

ART. 13.—*Arsenic in Rheumatic Gout.* By Dr. FULLER, Physician to St. George's Hospital.

(*British Med. Journ.*, March 28, 1857.)

Arsenic is regarded by Dr. Fuller as "a faithful ally in many cases of rheumatic gout," viz., in instances marked by extreme inactivity of the skin, where the patients suffer greatly from cold, and rarely, if ever, perspire, however warmly they may be clad, however active the exercise they take, and however great the heat to which they may be subjected. Under the use of arsenic, "the languor and depression which characterise the disease pass off; the complexion improves; the skin loses its dryness and harshness; the excretions resume their healthy character; the patient gains flesh; and the rheumatic or gouty symptoms subside." Dr. Fuller gives, if the urine be turbid, from eight to fifteen minims of liquor potassæ arsenitis with liquor potassæ or acetate of potash; if the urine be clear and of low specific gravity, he orders from ten to twenty drops of liquor arsenici chloridi, either alone or in combination with bark, and (if mineral acids be indicated) hydrochloric acid. In cases of chronic rheumatism also, Dr. Fuller has found arsenic of great service. The *modus operandi* of this remedy, as well as that of sulphur, he professes himself unable to satisfactorily explain. However, of the fact he is certain, that arsenic, judiciously administered, and carefully watched in its effects, is one of our most valuable remedies in the chronic forms of rheumatism.

ART. 14.—*On Rheumatic Tenosynitis.* By M. CHASSAIGNAC.

(*Mon. des Hôpitaux*, No. 92, and *Medical Times and Gazette*, Jan. 3, 1857.)

M. Chassaignac considers, that rheumatic inflammation of the tendons is an affection that has not as yet been sufficiently studied. The patient who elicited these remarks recently entered the hospital on account of a rheumatic hydarthrosis of the right knee, having already suffered from several attacks of rheumatism; so that there could be no doubt of the diathesis being present. There was observed, also, in this patient, on his admission, a painful hypertrophy of the tendo-Achillis on each side. It was not an example of the affection which Velpeau has termed Crepitating Tenosynitis, and which consists in an inflammation of the sheath of the tendon, and is characterized by a serous effusion, accompanied by a kind of crackling analogous to that which is heard on pressing starch or hardened snow between the fingers. Here it is an affection of the tendon itself; for, on the one hand, the tendo-Achillis has no synovial sheath, and the thickening can only arise from a modification of its proper tissue; and, on the other hand, the hardness was such in this case as could only arise from an increase of size exclusively due to the tendon. The induration proceeded from below upwards, and at one period the upper part of each tendon having become inflamed, it could be felt hard and tender, as could the foliaceous prolongations it sends among the muscles of the calf,—prolongations that could be easily perceived by simple palpation. The induration was attacked by vapor douches, and through their agency the movements, which were at first painful and difficult, have become more free, while the tendons have been rendered more supple, and the hypertrophy has diminished.

ART. 15.—*The Constitutional Treatment of Cancer.* By Mr. WEEDON COOKE, Surgeon to the Royal Free Hospital, and to the Cancer Hospital.

(*Lancet*, April 15, 1857.)

The following remarks, we are convinced, contain the key to the only treatment of cancer which offers any chances of a successful result:

"In a large number of cases," says Mr. Cooke, "there is a period when the cancerous tumor ceases to increase, begins to diminish, and gradually to waste away, so, that the prolongation of life is not in any way affected by the patient having been subject to this malady.

"This spontaneous cure of the disease has been noticed by Velpeau, as well as by Sir A. Cooper and other authors, and several cases of cure by atrophy could be recited from amongst the patients at the Cancer Hospital. If the *vis medicatrix naturæ* is sufficient even in a few cases to check the disease, may we not fairly expect that some of the means which we possess so abundantly for encouraging a healthful condition of the solids and fluids of the body shall be effective in the assistance of the vital powers to stop the further growth of the fungus. All medicines or dietaries of a lowering description I utterly repudiate, and even the iodide of potassium, which Velpeau says cured three cases of cancer, I have little inclination to employ, unless in combination with iron or some other tonic to counteract its depressing tendency. All the soporifics should be objected to, as adding to the dyscrasia, and when, from the entreaties of patients, it becomes necessary to have recourse to them, all hope of remedy must be put aside. Arsenic has formed the basis of most of the secret remedies which at regular intervals sweep over society, exciting all the superstitious reverence which more or less lurks in every breast, and has brought for a short period great grist to the magician's pouch; but according to my experience, its usefulness, either internally or externally, does not compare to other more certain and less dangerous tonics and escharotics. Of all the medicaments which experience or theory has shown to influence this disease, iron in its various forms is capable of effecting the largest amount of benefit. In order to obtain this good in various constitutions, it is necessary to vary the form of its administration, and then to alternate this tonic with others. The mineral acids are most valuable, either alone or in combination with other drugs. A mixture of lemon-juice and sarsaparilla is, for delicate people, a most excellent appetizer. Bark in the form of the compound tincture is largely used with the greatest benefit at the Cancer Hospital, and cod-liver oil, as an adjuvant to other remedies, is serviceable.

"Diet and moral management are of the utmost moment in the conduct of these cases. It would be impossible to lay down dietetic rules applicable to every case, since each person has his peculiarities, and must be managed in accordance with them; but it will be well to say that the system requires to be amply nourished and somewhat stimulated; that good meat, good beer, and a fair supply of good vegetables,—putting aside the nonsense of sloppy soups, and leuco-phlegmatic fish, to waste the appetite and distend the stomach,—are the grand indications as far as the important matter of diet is concerned, and wine may be taken according to advice. The treatment of the mind is not less important, and if we could eradicate the idea of the incurability of cancer, we should do much towards its cure. Hope would assist our efforts at restoration more perhaps than any physical agent. The diversion of the mind from the contemplation of the malady by the influence of genial society, by the cultivation of literature and science, and by change of scene in travel, have tended to the production of that atrophy of the disease, which is in fact its cure."

ART. 16.—*Relation of Cancer to Tubercle.* By Mr. J. Z. LAURENCE.

(*Assoc. Med. Journ.*, Oct. 4, 1856.)

Hannover states that, in 338 *post-mortem* examinations in the Friedrich's Hospital in Copenhagen, cancer was found combined with tubercle only three times. In 104 necropsies of cancer, Walshe observed only seven instances of tubercle. Page* gives a well-marked case. Leibert relates an interesting illustration. A woman aged 62 years, died with all the symptoms of advanced phthisis. At the autopsy crude and softened tubercles and vomicae were found in the apices of the lung; the peritoneum contained many partly cancerous, partly tuberculous infiltration. The liver also contained cancerous masses, mingled with deposits of tubercle. Dr. Carl Marius of Erlangen has accurately recorded twelve necropsies of tuberculous of the lungs, combined with cancer in other organs of the body.* "Up to the tin

* 'Die Combinationsverhältnisse des Krebses und der Tuberculose,' von Dr. Carl Marius. Erlangen, 1853.

of publication of my essay on Cancer," writes Mr. Laurence, "I had observed two cases of the coexistence of cancer and tubercle; neither of these cases were, however, very satisfactory ones; one was carcinoma of the right auricle of the heart—a dissection room case; the second a case of colloid (on the nature of which disease opinions are still divided) of the peritoneum. In both of these genuine crude tubercles were found in the lungs. But I am now able to produce a very conclusive case in point."

CASE.—Obed. O.—, æt. 77, consulted me in September, 1854, for a swelling of his right cheek, that had existed about four months before I saw him. The right malar region was considerably swollen, felt doughy, was dingy red and glossy; it was very tender, and he experienced remitting pains in the part, of a pricking and shooting character. He had five decayed teeth in front of the upper jaw, and had lost all his other teeth long before. The vision of the right eye was unimpaired. In his right nostril was an ordinary mucous polypus, which had existed for some years; this I removed. He knew not how to account for his malady. None of his relations ever had cancer, but there appeared to be a tuberculous tendency in the family. He had lost flesh; his appetite had forsaken him; his complexion was dull and earthy.

The further progress of the case may be told in a few words. The tumor increased, but never reached any considerable size, nor gave him much pain. The right eye was attacked by a chronic inflammation, and was slightly protruded; and he at last became nearly blind of this eye. He lost his sense of taste; "everything tasted alike to him." The nostril bled occasionally, often to a degree sufficient to require medical attention. His sense of smell, too, became impaired. But it was in his general health that the most marked changes occurred. He wasted to a "living skeleton," sinking with it to a degree of debility not often witnessed. He died the latter end of February, 1855, about eight months from the first commencement of his disease.

Post-mortem Examination.—*Brain*: Normal. *Antrum*: Filled with a growth which reached to the very bottom of that cavity, and had completely destroyed its anterior wall and the floor of the orbit. The tumor was of the medullary species; the cut surface was firm, yellowish-white, not hemorrhagic. On pressing it, a good deal of thick, white, turbid juice, exuded in small drops. I found this growth composed exclusively of cancer-cells—without exception, the most perfect specimens I have ever seen. Some were circular; others lengthened out; others again of an extreme length, and narrowed. A great many contained two or more, often a larger number, of nucleolated nuclei—excellent examples of endogenous cell-formation. Exudation-corpuscles and fat-globules were also abundant. *Lungs*: Upper halves of both firmly consolidated by quantities of crude, yellowish-gray tubercles. A few small vomiceæ. No cancerous deposits. The microscopic characters of the tuberculous matter were well marked. *Heart*: Some indurations at the edge of the mitral valve, and in the line of attachment of one of the segments of the aortic valve. Bicuspid and pulmonary valves normal. No hypertrophy nor dilation; muscular substance firm. *Liver*: Portal system congested. Contained a small earthy nodule. *Kidneys*: Left one of a deep venous hue, with a small cyst in its substance. Right one healthy. *Spleen*: Normal. *Intestines*: Not opened; much narrowed in calibre.

"Another fact worthy of attention is the different susceptibilities different organs have for the development of the two morbid states. Thus primitive cancer of the lungs is very rare, primitive tuberculosis of the lungs very common; primitive cancer of the liver is not uncommon, primitive tuberculosis of the liver is rare. And these facts may be multiplied for several other organs.

"I have long been struck, when listening to the melancholy tales of cancerous patients, how often one hears that some of their relatives have died of consumption. Is there any connection between the two diseases? Are they in any way, as it were, *vicarious* to one another? If they were, the great rarity of their both occurring *together* would be at once explained. However, the materials for answering these questions are as yet too scanty and vague to allow of any positive conclusions. All I will say is, that, of 51 cancerous patients who have fallen under my own observation, I find that no fewer than 14 (upwards of a fourth) knew of a parent, a brother, or a sister, having died of phthisis."

ART. 17.—*A case of progressive Fatty Degeneration and Atrophy of the Voluntary Muscles.* By Mr. LEGGATT.

(*Lancet*, April 11, 1857.)

Mr. Leggatt's observation of this case extended over above ten years. The subject of it was a male, born in the country, of healthy parents, in 1838, and removed to London in 1840. When first seen by the author he was strong, vigorous, and healthy, but in the summer of 1845 he had jaundice, measles, and remittent fever, the latter severely. After his recovery he became weak in his lower extremities, and fell frequently in walking. In 1847 he was seen by Sir B. Brodie, who considered the case as some spinal affection. In 1850, Sir B. Brodie recognized the disease as similar to Dr. Meryon's case alluded to. The symptoms were loss of power in the lower extremities, some wasting of the muscles of the thighs, those of the calves remaining firm and large. The treatment was essentially tonic, with galvanism. No benefit occurred, the muscular weakness increased, and gradually extended itself to the upper extremities. The muscles of the face, of deglutition and articulation, were not affected, nor was the sensibility of the skin. The rectum and bladder were unaffected, except that during 1849 there was slight incontinence of urine. His faculties were unimpaired, and his general health was good. He died from pneumonia in 1856, aged 18. A careful examination was made 28 hours after death, during which the muscular system generally was found to be wasted, and the lower limbs much emaciated. The spinal cord was softened about its middle one-third, but not inflamed. The roots of the spinal nerves were healthy, and so was the brain, and all the different viscera, except the right lung at its base, where it was softened. In the cervical and dorsal regions of the back the muscles were healthy, in the lumbar pale; the intercostals were thin, and the diaphragm very pale. By the microscope no inflammatory alteration could be detected in the cord or its membranes, but it showed fatty degeneration* in its various stages in the pale muscular structures, and in some of these fibrous degeneration without fat. In the heart much of the striated appearance of health was absent, and much of its structure was undergoing granular and fatty degeneration.

The author then analyses fifteen cases of this disease, and states the results thus: With respect to the brain: in 6 the brain was healthy; in 1 the white substance was softened; in 1 there was an osseous plate in the arachnoid. With respect to the cord: in 6 it was healthy; in one partially softened with fatty degeneration; in 1 partially softened without fatty degeneration; in 4 the anterior roots of the nerves were not observed; in 1 they were inflamed, softened, and atrophied, the cord also being inflamed and softened; in 1 they were normal, while the cord was softened, but not inflamed. He thus considers that the disease in question was not of spinal origin, in his own case being persuaded that the softening of the cord was only of recent origin, and not the cause of the paralysis. He also regards it as premature to advance M. Cruveilhier's theory, that it consisted in atrophy of the spinal nerves at their roots; but rather views the disease as dependent upon depraved nutrition of the muscular system generally. In addition to wasting and want of power, M. Cruveilhier had described among the symptoms, pain, twitchings, and cramps; these are described in no other paper. In all, the general health was good, and the command of the sphincters complete. The prognosis as to progress and to recovery was always unfavorable. The treatment, of course, was tonic, with the use of galvanism. The author, in conclusion, enumerates the causes, and groups them thus; 1. Excessive muscular action and fatigue. 2. Severe illness, and exhausting influences. 3. Hereditary tendency.(?) This seemed established in Dr. Meryon's and M. Aran's cases; though, in the present instance, the author could not trace this as a cause.

ART. 18.—*The Atrophy of limited groups of Muscles.* By Dr. BRITTAN, Physician to the Bristol Infirmary.

(*British Medical Journal*.)

In the "Dublin Quarterly Journal of Medical Science," for November, 1856, Dr. Reade, of Belfast, published a paper, entitled "Contributions to the Pathology of the Spinal Marrow." In it he relates three cases to illustrate "a diversity

of morbid action arising out of disease or injury of the same portion of the spinal marrow." The three cases are: 1. "Symmetrical muscular atrophy." 2. "Paralysis of the body beneath the phrenic nerves, from concussion." 3. "Paralysis of the body beneath the phrenic nerves during dentition." The first of these cases is adduced in illustration of the views of M. Cruveilhier on muscular atrophy, which views are—

That there is a species of muscular paralysis, sometimes partial, sometimes general, which gradually and successively invades, fasciculus by fasciculus, and fibre by fibre, the voluntary muscles, leaving all the functions of nutrition intact, excepting that of muscular nutrition.

That this gradual muscular paralysis is the consequence of progressive atrophy of the anterior roots of the spinal nerves, and equally progressive atrophy of the corresponding muscles.

That this "*paralysie musculaire atrophique*," is analogous to that which results from section of muscular nerves.

That the facts appertaining to this form of paralysis confirm the theory of Sir Charles Bell.

And that these observations demonstrate a previously unknown influence of the anterior roots of the spinal nerves on muscular nutrition.

"I have lately," said Dr. Brittan, "had two cases analogous to the first in Dr. Reade's paper, under my care at the infirmary; but as they offer certain important differences as to the history of the patients and early conditions of the disease, I think it may be worth while to publish them, with a few remarks; more especially as Dr. Reade seems to think them rare, or at all events, to have been able to find but one recorded."

Dr. Reade's case is that of a young man, æt. 19, nearly six feet high in his clothes, apparently a specimen of robust health and excellent constitution. Eighteen months previous to examination he had been distinguished amongst his companions in all athletic exercises, and well proportioned in his muscular development. 'The first sign of the approaching disease was a degree of stiffness or difficulty of executing the motion of putting on and removing his hat' (in other words, of raising his hand to his head); 'never suffered pain, and has enjoyed uninterrupted health in all other respects. When he stripped his body to the waist, he exhibited neck, chest, and arms, to the elbow-joints reduced to the most abject degree of emaciation; this was symmetrical; the greater and lesser pectorals were little more dense than the strongest brown wrapping-paper.' The muscles of the neck, scapulæ, and humeri, were reduced to the mere elementary outline of muscles; whilst from the elbows, the forearms and hands displayed the full development of a robust and vigorous man, with all the concomitant power, sensibility, and aptitude for use. He was under treatment for two years. A seton in the neck, the use of dumb-bells, and electro-magnetism, were tried, but without material improvement. Six years later he was again inspected, and was found decidedly improved; the muscles more developed. The muscles of the neck have been fully restored, and the others considerably augmented and perfectly obedient to the will. The forearm and hand have lost much of their former bulk; but his occupation for the six years has been sedentary. His health has been uninterruptedly good.

"The analogous case is quoted from Rokitsansky. A laborer, æt. 45, much exposed to wet, and in the habit of allowing his clothes to dry on him, was attacked with pain in the left shoulder, which was most severe about fourteen days after it commenced. There was no swelling, redness, numbness, nor tension; but great pain when the arm was raised with the other hand: he could not lift it without. After the first week the shoulder was found wasted; as the pain subsided the wasting advanced, till the deltoid, supraspinatus, infraspinatus, and teres muscles, seemed completely absorbed. The shoulder-joint was healthy, and there was no emaciation of the forearm or hand.

"Dr. Reade regards this case as one of muscular atrophy from abeyance or destitution of the function of nutrition; and he states 'these three cases illustrate a diversity of morbid action, arising out of disease or injury of the same portion of the spinal cord.'

"He also alludes to two other cases within his own cognizance; one of atrophy proceeding from the shoulders to the feet, accompanied by paralysis, and a second

confirming Cruveilhier's statement of the pathology of this paralysis, the same morbid changes having been found in the roots of the anterior spinal nerves. We thus have muscular atrophy, partial or general, according to Cruveilhier, depending on atrophy of the anterior roots of the spinal nerves. Muscular atrophy partial, according to Dr. Reade, depending on imperfect nutrition, the result of disease of the spinal cord.

"My two cases more accord with that quoted from Rokitsansky, and show, I think, that muscular atrophy, with of course necessarily a greater or less degree of loss of power, proportionate to the amount of atrophy, may sometimes depend on another cause, or at least appear to spring from a different origin, and be connected in some way with rheumatism and the rheumatic diathesis. They are as follows:

CASE 1.—William Spencer, cotton-spinner, æt. 24, was admitted under my care, at the Bristol Royal Infirmary, in November last. His history was as follows. Four years ago he was discharged from the 2d Regiment of Foot, on account of an attack of rheumatism, for which he was in hospital seven months. His joints were then much swollen. Three years since he felt aching pains in the left shoulder, with stiffness and inability to move it freely; these symptoms gradually increased, and, *pari passu*, the shoulder became more emaciated; he has, however, continued to work at the cotton factory until very lately.

He is now excessively emaciated all over the body as regards the muscular structures, the joints being very prominent, and the muscles feeling like mere cords. His ordinary position is with the elbows flexed to a right angle, the forearms supinated. He states that he can move his arms better at night, especially after exertion during the day; the attempt to straighten the arm gives pain. He can raise the arms without pain, but has not power to lift anything. His general health is good. The first sound of the heart is rather harsh and rough. He perspires excessively in his limbs, particularly on the thumbs, and most remarkably after the galvanism, which was tried without benefit. He left scarcely, if at all, improved.

CASE 2.—Charles Webber, æt. 23, short, but healthy-looking, and apparently well made, became an out-patient, October, 1856. By trade he is a shoemaker, and always enjoyed good health. He was lately a corporal in the 17th Foot, from which he was discharged on account of his present disablement. Six months since, whilst on duty at Limerick, he was exposed to very heavy rains, and continually wet; on rising one morning after exposure could not walk, on account of pain in his right hip, knee, and ankle-joints, which then began to swell. He was confined to bed for fifteen days. After the first seven days the pain passed to his shoulder and side of the head, leaving his hips and legs. Soon after the pain reached his arm he found the flesh between his shoulder and elbow diminishing, on the right side first, then on the left. In two months the arms were no larger than his wrists, and he could not lift them to his head. This continued for six weeks, when they began slightly to increase again, and he felt more power in them.

Present condition.—His arms, from the neck to the elbow, are less than half of the natural size, all the shoulder and humeral muscles being much diminished; the biceps only seeming of anything like the natural size. There is very little deltoid, and the triceps feels like a mere band. His appearance exactly coincided with that of Dr. Reade's patient, as shown in the drawing that accompanies his paper. He cannot raise the arm well, but can flex the forearm on the arm firmly. He had no particular treatment in his regiment; nothing but liquor potassæ. He had syphilis three years ago, and a few spots came out as the rheumatism appeared. He was under treatment for a month, principally with iodide of potassium, and much improved.

"I should," proceeds Dr. Brittan, "feel great diffidence in suggesting doubts as to the correctness of M. Cruveilhier's assertions, supported as they appear to be by the observation of the morbid changes, described in the *post mortem* examination of the corresponding case, alluded to by Dr. Reade, did I not conceive that the cases now reported bore me out in the supposition that the cause alleged by Cruveilhier is at least not the only cause of this curious disease; but there are many other objections to this theory to which these cases direct our attention.

"It will be observed that in Dr. Reade's case, and in my own, especially the second, there are several common peculiarities.

"1. The symmetry of the morbid action.

"2. The localization of it to particular groups of muscles; for example, those of the shoulder and humerus, and, to some extent, the biceps; whilst the muscles of the forearm remained unaffected.

"3. The uniform commencement of the atrophy in the upper parts, and progress downwards.

"4. The absence, in each case, of more paralysis than must necessarily be the result of such a degree of atrophy; in fact, it is not paralysis, but loss of power from want of muscle.

"Each of these, independent of all other considerations, appears to me to afford strong objection to either of these alleged causes of the morbid actions. For,

"1st. They require that we assume the anterior spinal roots to be exactly symmetrically affected on either side.

"2d. With a knowledge of the extraordinary complexity of the arrangement of the filaments forming the anterior roots of the cervical nerves, more especially the different distributions and variety of muscles supplied by branches from the fifth, sixth, seventh, and eighth roots, it is almost impossible to conceive atrophy of these anterior roots, affecting only limited groups of the muscles, to all of which these branches proceed; for instance, how can the scapular muscles be affected with paralysis and atrophy, caused by atrophy of the spinal roots, through which their nervous filaments pass, without involving also the phrenic nerve; or of the deltoid and humeral muscles without corresponding affection of those of the forearm and hand, whilst the subscapular, musculo-spiral, and circumflex nerves may be traced through the plexus to the 5th, 6th, 7th, and 8th roots, and the ulnar and median to the same.

"3d. If we allow Dr. Reade's view, that these cases depend on imperfect nutrition, the result of disease of the spinal cord, which involves the influence of the anterior roots—in other words, M. Cruveilhier's theory—we must suppose, to explain these cases, that this function of the cord is so located and circumscribed that disease of its structural instruments may produce its effect without inducing paralysis; or assume (as Dr. Reade states his case proves) that, as the result of organic lesion of the spinal marrow, 'muscular atrophy may exist without paralysis, as paralysis of motion may exist without disease of sensation or the converse.'

"4th. The absence of complete paralysis in each case, and the proportion between the wasting and loss of power, seem to evidence that the loss of power is more fairly to be ascribed to want of nutrition and loss of substance, than to loss of nervous energy.

"In fine, I cannot help thinking that the phenomena of these cases give no support to the views of M. Cruveilhier or Dr. Reade; and without considering the evidence of the two I have related, and that of Rokitansky, as sufficient to prove any connection between this curious condition and rheumatism, they do, I think, afford reason to induce us to lean to the side of analogy, and look for some more general or diathetic reason to account for such peculiarities of mal-nutrition. I should add that there was no evidence to lead to the notion of lead-affection, nor, as far as I could learn, had mercury ever been largely administered in either of the cases I have reported, though 'spots,' probably syphilitic, appeared with the rheumatism in the case of Webber."

ART. 19.—Diagnostic value of the Hydatid Sound ("son hydatique," of Piorry).

By (1) Dr. MARKHAM, Assistant-Physician to St. Mary's Hospital; and (2) Dr. LITTLE, Physician to the London Hospital.

1. (*Assoc. Med. Journ.*, Dec. 20, 1856.)

2. (*British Med. Journ.*, March 7, 1857.)

1. Dr. Markham's attention was called to this peculiar and rare auscultatory phenomenon—hydatid fremitus—by the following case. The phenomenon was long ago described by Piorry, but its value, as a diagnostic sign, has not yet been satisfactorily determined. The question, as will be seen, is one of direct practical interest, and not merely one of learned curiosity. Dr. Markham writes:

"A lad, who has been some time under my care as an out-patient at St. Mary's Hospital, and who is at present in the hospital, under the care of Dr. Chambers, has had for some length of time a large tumor occupying the right hypochondriac region, and extending far down into and widely over the right side of the abdomen. The general surface of the tumor is smooth, but there are one or two prominent, obtusely conical projections, about the size of half an orange, rising from the surface. One of these projections is soft and elastic, and when percussed, communicates to the finger which is struck a most peculiar sensation, resembling very exactly that which arises from the vibrations of a loosely hung steel spring. When auscultation and percussion are practised together over the lump, the same idea is still communicated to the mind. The description of the vibration, as given by Piorry, very exactly explains it, and immediately occurred to me when I first noticed the vibration in this case, though I must confess that I had hitherto been disposed to look upon Piorry's subdivision of percussion-sounds as somewhat imaginative. Piorry says: 'Il est impossible de rendre par des mots la sensation qu'il donne. Elle semble se rapporter, à la fois au doigt qui percute, et à l'oreille qui l'écoute: le doigt éprouve une sorte de résistance élastique qui le repousse, et cela plusieurs fois de suite; l'oreille perçoit un son qui ressemble au bruit humorique quoiqu'il en diffère sous quelque rapport. Tout porte à croire que, dans les cas que j'ai observé, il s'agissait de tumeurs hydatiques.' . . . 'La sensation que le doigt éprouve, et que accompagne le bruit, peut être entièrement comparée à celle que donne une montre frappée sur la surface opposée au verre.'"

"He adds, that, relying upon facts which he had observed, he considers that the phenomenon indicates the presence of small hydatid cysts suspended in the fluid of larger cysts.

"That the phenomenon is very rarely observed, we may conclude from the circumstance that Skoda, in referring to Piorry's description of it, remarks that he does not know if any one else has made similar observations. It is possible that the reason of its being so seldom observed is, that it is so seldom sought for. Hydatid tumors also, do not, as a rule, present on the anterior parts of the liver.

"The practical point of interest is, of course, involved in the diagnosis of such a case as here described. What is the nature of the tumor? Is it encephaloid? is it of an hydatid character? If Piorry's view is correct, the latter must be its nature. Now, in such case, should the growth or enlargement be so great as to interfere with the functions of any of the vital organs, and so to endanger life, then might very properly be considered the propriety of opening the tumor, and giving exit to the hydatid masses. In this we should be only following the example which nature not unfrequently sets us; and, provided we can be satisfied that adhesions have taken place between the tumor and the abdominal walls, we may thus operate with safety. Piorry indeed mentions that Recamier had opened one of these cysts, having first applied caustic over the surface to produce adhesions between the peritoneal surfaces of the tumor and the walls of the abdomen.

"If the tumor be malignant, of course surgical interference will have nothing to say to it.

"The experience of the profession, to which I here appeal, may perhaps assist in the diagnosis of this case. I may add, that the peculiar physical qualities of hydatids, the vibratile gelatinous-like movements of their coats when shaken or gently struck out of the body, quite favor the idea that they may give rise to the above-stated auscultatory phenomena.

"The questions to be considered then, are:

"Does this 'hydatid fremitus' invariably indicate the presence of hydatids; or may it arise from any other cause?

"Do hydatid tumors near the surface of the body when percussed always give rise to the fremitus? And, if not,

"What is the particular condition of the hydatid cyst, which gives occasion to the fremitus?"

2. The remarks of Dr. Little upon this subject were called forth by the previous remarks of Dr. Markham. He says:

"About 1840, I visited, late one evening, in consultation with Dr. Langmore, Finsbury Square, a gentleman, aged 36, who presented, with other signs of hepatic derangement, an enormous abdominal tumor which had commenced in the rigl

hypochondrium. A recent and sudden aggravation of symptoms occasioned the consultation. I discovered the presence of the '*son hydatique*' of Piorry, and realized the truth of Piorry's description, as quoted by Dr. Markham, '*La sensation que le doigt éprouve et que accompagne le bruit (humorique) peut être entièrement comparée à celle que donne une montre frappée sur la surface opposée au verre.*' Upon the strength of this sign, I suggested that the tumor was probably due to hydatids. I was subsequently informed by Dr. Langmore that the same night the patient discharged by vomiting a *pailful* of them. Some months later I saw the individual, without signs of tumor, in tolerable health, although very spare in habit. I believe that he sank two years afterwards from the same disease.

"With my present experience of hepatic tumors, I should, in such a case as that above related, rely much upon the great size of the more or less obscurely fluctuating mass in diagnosing its hydatid origin. I have never witnessed a perfectly similar case."

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 20.—*The influence of Season upon the Mortality from Brain-disease.* By Dr. ROBERT BOYD.

(*Edinburgh Medical Journal*, Sept. 1856.)

The deaths from diseases of the brain in the St. Marylebone Infirmary during the three years 1840–42, occurred at the times stated in the accompanying table. The particulars are from a paper entitled "Contributions to the Pathology of the Brain, &c."

TABLE I.— <i>Organic Diseases of the Brain.</i>												
					SPRING.			SUMMER.			AUTUMN.	
					March.	April.	May.	June.	July.	Aug.	Sept.	Oct.
					Nov.	Dec.	Jan.	Feb.				
					M.	F.	M.	F.	M.	F.	M.	F.
Inflammation of the Brain and Mem- branes,					9	7	3	1	3	3	6	6
Softening of the Brain,					5	3	0	0	0	5	4	0
Tumors of the Brain,					2	4	1	1	1	1	1	1
Sanguineous Apoplexy,					2	5	1	2	4	1	8	7
Paralysis,					3	4	0	2	2	2	0	0
55 Males, 55 Females, Total, . .					21	23	5	6	10	12	19	14
<i>Functional Diseases of the Brain.</i>												
Convulsions,					0	0	1	0	2	4	2	0
Epilepsy,					1	1	1	1	0	0	1	1
Insanity,					3	1	3	5	1	2	2	2
17 Males, 17 Females, Total, . .					4	2	5	6	3	6	5	3

The organic diseases, therefore, are most fatal in spring and winter, the functional disorders in summer and autumn.

ART. 21.—*Effects of Mental Labor upon the Blood.* By Dr. THEOPHILUS THOMPSON,
Physician to the Hospital for Consumption at Brompton.

(*Lancet*, Dec. 18, 1856.)

Dr. T. Thompson commences this paper by remarking that the requirements of advanced civilization make increasing claims on the mental and physical energy, as the number of aspirants for distinction multiplies, sympathy becoming more intense, taste more fastidious, competition more keen, and the necessary concentration of mind on special subject of pursuit involving an exhausting effort. Intellectual, like muscular action, probably involves an expenditure of living material, and introduces a changing series of particles, those which have been used giving place to others which come with the energy of new life to perpetuate the action. Stagnation may induce decay, but undue persistency, haste, or intensity, especially in creative efforts, may occasion waste. The author then proceeds to adduce examples. One instance was an account-keeper, who, after being for some weeks engaged twelve hours daily at his desk, lost the power of fixing his attention, and became affected with such sensitiveness of the nervous system as to be frequently kept awake at night by tingling of his skin, and, when he fell asleep, disturbed by frightful dreams. There was no emaciation, loss of appetite, or disturbed digestion, and the urine was natural, with the exception of a few oxalate-of-lime crystals; but there was a strong venous hum in the jugular veins, a slight cut bled freely, and the blood under the microscope exhibited a remarkable deficiency of the pale corpuscles, the proportion not being more than a fourth of the average in health, or a twentieth of what is common in phthisis. The patient, with better regulated habits, and the use of cod-liver oil and nitro-hydrochloric acid has rapidly improved. The author observed, that the clergy, being specially exposed to the wear of thought and sympathy, are peculiarly liable to this disordered condition of the blood, their nervous system becoming unduly susceptible, and their minds rendered too easily accessible to the delusions of pseudo-science and quackery. He described the case of a popular clergyman, who, without impairment of digestive or muscular power, became affected with sleeplessness and disturbed continuity of thought, the principal physical symptom being jugular murmur. Nitro-hydrochloric acid, cod-liver oil, and subsequently phosphate of iron, with phosphoric acid, were employed with most satisfactory results. Dr. Thompson is disposed to think, that the wear of inordinate and anxious work acted as a succession of shocks through the nervous system on the blood, and he illustrated his views by histories of effects produced by sudden and violent shocks, physical and mental, showing that railway collisions occasionally produced results analogous to those depending on intellectual causes, and adducing an instance from the practice of Sir Henry Marsh of death from entire change of the condition of the blood, without any other organic disease, induced by the mental shock occasioned in a young lady by having accidentally administered poison to her father. After relating instances illustrative of the exhausting effects of exclusive attention to one object, and remarking on the varying phenomena resulting from differences of temperament, or from association with indigestion and other collateral ailments, the author proceeded to show, that in addition to measures directed to the regulation of the mental habits, medicines calculated to enrich the blood were most important auxiliaries, and that oils could often be employed when chalybeates proved too exciting. The class of cases referred to pointed to the conclusion, that over-work of the brain may often occasion deterioration of the blood before the condition of other organs disturbs the brain. The probably hereditary transmissibility of such conditions makes them of incalculable importance, and happily they are amenable to treatment. The author concludes with remarks on successive changes in the prevailing type of disease. The plethoric condition prevalent in the seventeenth century gave place, in the eighteenth, gastric congestion. This condition has now ceased to predominate, and we have perhaps, entered on an anæmic era, likely, if not corrected, to prove unfavorable the production of great men. As respects the application of medical theories a wider range of view should be sought. If the medical art is to render a full share of good to the community, it must be not simply in treating the maladies of individual patients, but by ministering to the conditions which disturb the vitality of the race. Thus, whilst improving our appliances for daily work, remembering that we are enlisted in the service of mankind, we may make posterity our debtors.

ART. 22.—*On Cerebral Abscess.* By Professor LEBERT.

(Medico-Chir. Review, April, 1857.)

"Professor Lebert observes on the importance of a minute investigation of each form of disease that affects the brain, and draws attention to the fact, that abscesses of that organ have not as yet met with that consideration which they merit. He has observed five cases himself, and has collected a large number reported by various authors, the analysis of which yields the following results :

"Of the 80 instances collected, 22, or above a quarter, presented scattered abscesses in various parts of the brain ; the remaining 58 were cases in which solitary abscesses were found in some part of the encephalon. These were distributed as follows :

Left hemisphere,	23 cases.	Cerebellum,	12 cases.
Right hemisphere,	18 "	Pituitary body,	2 "
Corpora striata,	2 "	Medulla oblongata,	1 "

"In the cases of multiple abscesses, there were never more than five. In 11 there were two ; in 6, three ; in 3, five ; in 2 cases the number was not specified. The abscesses generally occupy the white substance, only affecting the gray matter by extension from the former. The author points out the peculiarity of the fact that suppuration prevails in the less vascular white matter of the brain, while the morbid condition most prevalent in the gray matter is softening. The form of cerebral abscesses is generally oval ; they vary in size from that of a pea to that of a hen's egg and more. An entire hemisphere is at times found converted into a pouch filled with pus. When a communication is established with one of the cerebral ventricles, the form becomes very irregular. The contents are generally a greenish pus of considerable density, rarely containing blood. In 18 cases the pus is reported as having been very fetid. The microscope shows the pus to be very granular, and not containing many well-formed pus-corpuscles : the older the abscess, the more they seemed to be retrograding. The abscess is at first surrounded by cerebral tissue infiltrated with pus, beyond which the cerebral tissue is softened, and, if the abscess is very recent, presents a red zone of vascular injection. Plastic exudation soon forms a membranous sheath, which may attain a thickness of from one to four millimètres. The cyst itself is supplied with bloodvessels, and thus helps to promote suppuration. It does not appear that these encysted abscesses can be cured ; at least, no evidence can as yet be offered to prove it.

"With regard to the duration of the affection, it appears, from an analysis of 18 cases, in which the period was noted, to have been as follows :

From 10 to 20 days,	1	From 40 to 50 days,	3
20 to 30 "	2	50 to 60 "	5
30 to 40 "	2	60 to 90 "	2
From 90 to 120 days,	1.		

"In many cases there was no indication as to the duration of the disease ; in others, only the acute symptoms which closed the scene were considered, though a chronic stage had evidently preceded their outbreak for a longer or shorter period.

"Professor Lebert next considers the question of the rupture of an abscess, and its communication with other parts. Perforation or abnormal communications were found to have occurred in 12 cases. The lateral ventricles are the parts into which perforations most frequently occur ; the presence of pus causes inflammatory thickening of the ependyma, and scattered spots of inflammatory softening in the adjoining cerebral tissue. In 5 cases the perforation was effected through the ear or the orbit, and the abscess was discharged externally. One of these cases is related by Itard, in which the internal ear is said to have remained healthy, though the cerebral discharge made its way outward through the petrous portion of the temporal bone.

"Professor Lebert analyzes the histories also, with a view to determining whether any uniform lesion of other organs accompanies abscess of the brain. This does not seem to be the case ; the general conclusion appears to be, that what debilitates the individual causes a predisposition to this affection. In 6 cases, pyæmia supervened distinctly ; 3 cases in which it is suspected to have occurred, are not accom-

panied by sufficiently detailed necropsies to justify a positive statement. A complication with tubercular disease was only noted three times, in one case affecting the cervical, bronchial, and mesenteric glands, in another the mesenteric glands only, and in a third the bronchial glands were tubercular, while the lungs were full of miliary tubercle.

"The most frequent cause of cerebral abscesses is internal otitis; this in its turn often resulting from scarlet fever, angina, or scrofula. Cerebral abscesses also occur as sequelæ of inflammations of distant parts—as of pneumonia, pericarditis, enteritis, or of measles. They also occur in the form of metastatic abscesses, associated with chronic diseases which appeared to exercise no definite influence in their production, and as a result of traumatic injury.

"The latent character of the disease is important in regard to diagnosis. Sudden headache is the symptom which most frequently first excites attention; it is generally accompanied by febrile symptoms; vomiting, difficult articulation, and convulsive attacks may supervene; the patients become heavy and morose, and show delirium, contraction of pupils, photophobia; numbness and formication may supervene, and apoplectic symptoms may occur; but all these symptoms vary much in different cases. The intellect suffers comparatively little; sensibility suffers more frequently: the headache is more or less intense, generally diffuse at first, and subsequently unilateral. Coma occurs frequently, but often only temporarily. Paralytic states were observed in about one-half of the cases; they were generally local, but showed themselves also in the form of general muscular debility. Diminished articulating power was observed in 10 cases. In regard to the special senses, only the affection of the ears presents any points of importance. No special symptoms are observed in reference to the vascular or respiratory system. Disturbance of the digestive organs showed itself, in the form of vomiting, in 20 cases; involuntary defecation occurred towards the fatal termination of 11 cases. The duration of the disease appears to fluctuate from two or three weeks to two months; there is necessarily a difficulty in determining the point, as the commencement can only be approximately fixed. It occurs at all ages; but the greatest frequency prevails between the sixteenth and thirtieth years.

"On the subject of treatment nothing is suggested, as no case of cure is known. The author especially protests against adoption of any surgical proceeding for the purpose of removing the contents of the abscess."

ART. 23.—*A case of Abscess in the Cerebellum.* By M. DUPUY.

(*Gaz. Méd. de Paris*, April 4, 1857.)

This case is another example of this somewhat rare affection.

CASE.—The patient, a female, æt. 28, was admitted into the Hôpital la Charité, under the care of Dr. Rayer, on the 25th January, 1857. She exhibited at this time the ordinary symptoms of facial paralysis on the right side, and she had a purulent discharge from the right ear. There was neither pain nor swelling in the mastoid region; the hearing was not affected; and the tongue and uvula were perfectly straight. The discharge from the ear had existed from infancy; and the facial paralysis, according to the statement of the patient, had come on three or four weeks previously, after exposure to cold and damp, the onset being marked by acute cephalalgia, affecting the whole of the head, and by vomiting. On admission there was some difficulty in walking, and the patient required the arm of another person to move along the ward. The bowels were constipated.

January 26th.—Bleeding. 28th.—Galvanism was applied to the paralyzed muscles, and under this treatment the distortion of the features became sensibly lessened. No relief to the headache; and now the integuments of the head have become very sensitive, and there are many painful spots in the course of the fifth pair of nerves. The right pupil is sometimes more dilated than the left. The vomiting and constipation continue, and there is rapid emaciation.

February 2d.—On raising the patient, to ascertain whether she can walk without assistance, she was found to reel from side to side as if the floor was unstable; and during the night she had fallen flat upon her face upon attempting to get up.

4th.—The state now is one of complete collapse, although there is sufficient intelligence to reply by signs to any question. The general sensibility is exalted; the

discharge from the ear diminished; the pulse 100, without any increased heat of skin. Cupping-glasses to the neck.

5th.—The faculty of speech restored. No delirium during the day, but during the evening agitation and a constant disposition to get up, which rendered mechanical restraint necessary. A blister applied to the nape.

7th.—The head is bent backwards. Slight delirium.

8th.—The same.

9th.—Death.

The vomiting and constipation continued throughout the whole course of the case; and the urine was very scanty during the whole time she was in the hospital.

On examination after death, the upper part of the petrous portion of the temporal bone was found in a carious condition, and there was a small ulcerated opening in the corresponding portion of the dura mater. The facial nerve had a brownish tint in the part which is enclosed in the canal of Fallopius. Upon the inferior aspect of the right cerebellar hemisphere, under the arachnoid, was a thin collection of fetid pus, and this collection communicated with another collection of the same kind, contained in a cavity in the neighboring substance of the cerebellum. The opening into this cavity was immediately on the outside of the middle cerebellar peduncle. The walls of this cavity presented (1) a pulpy layer, having everywhere a very marked blackish tint; (2) a reddish-brown vascular layer, which is none other than inflamed cerebral tissue in the period of red induration; and (3) a layer of indurated white nervous substance. The layers might be easily enucleated from the neighboring parts. The pia mater was injected over this abscess, but not the arachnoid. There were no other lesions either in the nervous centres or elsewhere.

ART. 24.—A Case of Rupture of the Meningeal Artery. By Mr. HENRY WATSON.

(*Lancet*, Aug. 30, 1856.)

"This case," remarks Mr. Watson, "is very interesting, and shows the great value of Mr. Hilton's opinions on injuries of the head. The patient doubtless struck his head on the right side when falling, and, from the form of the skull, the effects were felt on the opposite side, resulting in the rupture of the middle meningeal artery (the '*contre-coup*' of the French). My reason for trephining on the opposite side to the bruise was the paralysis on the right side; that being a point on which I have heard Mr. Hilton particularly dwell, and which I believe is especially mentioned in his lectures."

CASE.—John Hawkins, æt. 27, a spare, delicate-looking man—the "Boots" in the *Golden Fleece*,—was seized on the 18th of April, at the commencement of a voyage to the Crimea, with a fit of epilepsy, for which I was called to see him. I found him lying on the deck, with all the usual symptoms of that affection. In a few minutes he recovered his consciousness, and was able to answer my questions; and walked to his berth apparently well. On my seeing him half an hour afterwards, to my surprise, I found him drowsy, stupid, and nearly insensible; in an hour's time he became completely so. His pulse became full, slow, and laboring; the pupils fixed and dilated; the skin hot; and his motions were passed involuntarily. I ordered his head to be shaved, and carefully examined it to see if there was any external fracture. None, however, was perceptible, a slight bruise only being visible on the right side. I therefore ordered a large blister to be placed on the scalp, fifteen grains of calomel to be given through the medium of butter, and a strong turpentine enema to be injected. In the evening, the right side of the body was completely paralyzed, and there was no improvement whatever.

For three days this state of things continued, the same treatment being resorted to. I was now convinced that unless something further was quickly done he would sink, and that, from the symptoms of the case, it was compression from extravasation. Bearing in mind Mr. Hilton's opinions on these cases, on the 22d I trephined over the site of the middle meningeal artery on the left side. On removing the bone, to my great pleasure I found a large clot of blood between the bone and the dura mater. This I removed, and in two hours afterwards the man had recovered his consciousness, and could speak distinctly and rationally; the paralysis also entirely disappeared. He went on well for the next four days, and on our arrival

at Malta I sent him to the hospital there, as it would be some time before he would be able to attend to his duties. At the expiration of a month the wound had nearly healed, and he had nothing whatever to complain of; I therefore ordered him on board, to resume his duties. In a couple of weeks the wound had entirely healed, and he went on performing his duties till our arrival in England in July, when he was discharged perfectly well.

ART. 25.—*Arsenic in Intermittent Mania.* By M. MOREAU.

(*Gazette des Hopitaux*, No. 113, 1856.)

Intermission in mental diseases is by no means a rare phenomenon, but it is almost always incomplete, for it seldom happens that a patient enjoys complete lucidity in the intervals. Such cases are, however, occasionally met with, and one recently occurred to M. Moreau at the Bicêtre. Quinine, according to some, is useful under these circumstances; and M. Moreau has employed it in various ways and doses, but never with decided success. He has since substituted arsenical preparations with much better success.

ART. 26.—*On Chloroform in Delirium Tremens.* By Dr. RICHARDSON.

(*American Journal of Med. Science*, Oct., 1856.)

Dr. Richardson having seen an account of the successful employment of chloroform in the treatment of delirium tremens, at the Hospital, Blackwell's Island, New York, to which he was at the time assistant physician, writes to protest against the accuracy of the statement. He says, that out of some hundred cases so treated, but nine were stated to be cured; while, in fact, this was the case with but one, all the others having yielded to large doses of opium and diffusible stimuli. On reviewing the cases in which chloroform seemed to be of use, he says, it is found that sleep only occurred after large and frequent doses of opium and stimuli had been already administered; and, in every case in which it was given before the patient had been nearly narcotized with opium, either fatal asphyxia was the result, or its influence rapidly passed off, leaving the patient as delirious, and often more so than before its administration. "In a pure and uncomplicated case of delirium tremens, we find that all the functions, both of animal and organic life, are inefficiently performed; the intellect is clouded, the appetite fails, digestion is impaired, all the secretions are scanty, the heart beats feebly, the pulse is small, and the tendency to local congestion is very great. When chloroform is administered in such cases, it necessarily produces congestion of the lungs, since the blood, not being decarbonized, flows more and more slowly through them until it ceases to circulate; hence the liability, in all cases where chloroform is inhaled, to death from what is sometimes called pulmonary apoplexy, or from subsequent pneumonia. I have made autopsies in several cases of death following the administration of chloroform, in one of which it supervened immediately after the patient had ceased to inhale the anæsthetic; and I have invariably found the lungs completely gorged with dark venous blood. Not only does chloroform produce congestion of the lungs, but also of the brain and nervous system generally."

ART. 27.—*On the use of Biniodide of Mercury in certain forms of Epilepsy.*

By Dr. FULLER, Physician to St. George's Hospital.

(*Medical Times and Gazette*, Feb. 14, 1857.)

At St. George's Hospital Dr. Fuller frequently uses the biniodide of mercury, and speaks of the great success he has obtained from it. Two cases of epilepsy at present under his care at the hospital may be quoted in exemplification. The one is that of a boy, 18 years of age, who came under Dr. Fuller's care about the middle of last November; the other, that of a man, æt. 44, who was admitted a patient in the middle of December. The boy, a plumber by trade, had fractured his skull fifteen months before admission, and began to suffer from epilepsy seven months afterwards. The man, a laborer, fell from a height of thirty feet on to his head nine years ago; had been more or less deaf with the right ear ever since, and began to suffer from epilepsy three years ago. There had been no discharge from

the ear, and no decided headache. In both cases, Dr. Fuller attributed the fits to chronic thickening of the dura mater, or, possibly, deposit between it and the bone, the result of the injury. To the boy he gave the biniodide of mercury, and did not have recourse to any local treatment. To the man he also administered the biniodide; but in consequence of the increasing frequency of his attacks, and the gradually increasing deafness, made use at the same time of a seton in the neck. Since the first week of the administration of the remedies neither of these patients experienced the slightest return of the fits. The boy feels quite well, and the man's deafness has greatly decreased. Nevertheless, Dr. Fuller directed that they should continue the remedies for at least another month or six weeks, with the view of completing the removal of the thickening to which he believes the fits to be attributable. Dr. Fuller administers the medicine in a state of solution, and believes that to this circumstance is, in great measure, due the success which has attended its exhibition. The scarlet-red biniodide usually employed in medicine is insoluble in water, and when administered in pills is on that account comparatively inert; whereas the biniodide, as given by Dr. Fuller, is perfectly soluble, forms a colorless solution, is readily absorbed, and speedily produces its specific effects. The solution is formed extemporarily by the addition of from five to ten grains of iodide of potassium to \mathfrak{zj} or \mathfrak{zij} of the liquor hydrargyri bichloridi. In cases such as those above alluded to, Dr. Fuller gives it uncombined with other remedies; whilst in cachectic rheumatism, accompanied by periosteal swelling, he usually combines it with bark and sarsaparilla. In his work on 'Rheumatism, Rheumatic Gout, and Sciatica,' 2d ed., p. 413, he says:—"The biniodide of mercury kept in solution by an excess of iodide of potassium, has proved in my hands the most valuable of all medicines in rheumatism which has supervened in a system tainted by the syphilitic poison, and in several instances has effected a cure after the bichloride had been given in vain."

ART. 28.—*Tetanioid symptoms arising from an over dose of Morphia.*

By Dr. CHARLES J. SHEARMAN.

(*Medical Times and Gazette*, March 7, 1857.)

The essential particulars of this case are thus given by Dr. Shearman :

CASE.—A lady, married, æt. 26, suffers most severely from painful menstruation. She has been in the habit of taking, during the last three years, from time to time, a dose of the following mixture, which scarcely ever failed to relieve the severe dorsal and abdominal pain and spasm from which she suffered at those periods: *R. Morphiæ acetatis*, gr. iij; *spir. etheris sulph. comp.*, \mathfrak{zij} ; *mist. camphoræ, aquæ destillatæ*, aa \mathfrak{zij} . M. ft. mist. One tablespoonful for a dose.

On the 24th of October last, the pain was very severe. She took a dose about 4 P.M., repeated it at 7 P.M., there being no relief. Soon after the second dose I was sent for, and found her suffering from severe lumbar and inguinal pain of the usual character, with bearing down, and copious menstrual flow; the abdomen tender to the slightest touch, even the pressure of the bedclothes was most distressing; the pulse was quiet; skin moist, in other respects natural; tongue clean; stomach irritable.

The mixture was repeated about 11 P.M. Half an hour after this I was again summoned, and found her limbs violently twitched from time to time under the clothes, spasmodic twitchings of the face, first on one side, then on the other; difficulty of deglutition; spasmodic action of the muscles of the arms and legs (chiefly of the extensors), and of the abdominal muscles; and while I remained with her partial opisthotonos occurred, and she frequently was jerked upwards and to the right side by the violence of the muscular action of the left. Titillation of the skin and quick pressure of the muscles at once induced the twitchings. Consciousness was perfect. Volition did not induce the spasms. No hysterical symptoms. The twitchings had occurred, she then stated to me (but only slightly), after each former dose of the mixture, but thinking the mixture was the cause of it did not mention it. Its subsequent violence alarmed her. During the continuance of these symptoms the original pain continued unabated.

I at once ascertained whether there had been any error in the mixture; it was correctly made up. Having seen repeatedly similar (but to a much slighter extent)

symptoms from morphia, I discontinued the mixture, directing, if the spasms did not soon cease, to give Acid. hydrocyan. dilut. (Ph. L.) ℥iij: aquæ fontanæ ℥ss. every three hours, and the spine to be gently rubbed with the following: R Tinct. aconiti (ex formula Flemingii); lin. saponis, aa ℥j. M. ft. linimentum.

The next morning (October 25) she was quite well.

ART. 29.—*Camphor in the tetanoid symptoms arising from Strychnia.*

By Dr. G. W. ARNETT.

(*Charleston Med. Journ. and Review*, Jan. 1857.)

Dr. Arnett's case might be more exact in several particulars, but it seems to deserve attention as showing the beneficial effects of stimulants in the treatment of tetanoid symptoms. At any rate, it is to one or other stimulant remedy that we should have recourse in a similar emergency.

"On the 20th of February, 1853, I was called in haste to visit a negro, æt. 28 years, the property of R. C. and W. J. Hutchinson. Having but a short distance to ride, I was soon at the bedside of my patient, when I observed the following symptoms: The patient was on his back in bed, his body slightly inclined to the right side; face and body covered with a profuse perspiration; countenance indicating the most intense pain and fear; head thrown back; and the muscles of the neck and back greatly contracted. This opisthotonic condition would last only a short time (the exact time not observed), and then gradually subside. The remission would not be complete before the trismatic symptoms would again return with increased severity. The pulse varied from ninety to one hundred and ten beats. The mind remained unimpaired, and also deglutition and articulation, except when the spasm was on him.

"The urgency of the case prevented my making any further observations at the time.

"I had but two remedies on which I could rely with anything like a prospect of success.

"I had read in the 'New Orleans Medical and Surgical Journal,' that camphor had been used with complete success. The other remedy which I had resolved on using, in case the camphor failed, was adipose substances. My idea of this remedy—if a remedy at all—was obtained from observing that strychnine would seldom poison wolves and other animals when concealed in fat meats. From this fact I concluded that oleaginous matters would destroy the poisoning action of strychnine.

"As the patient had been freely vomited by Mr. H—, before my arrival, I determined to try the effects of the camphor immediately. I gave ℥ij of a tincture, made on the place, by dissolving camphor in common whiskey, as much as it would take up. In fifteen minutes the severity of the symptoms began to decline, which continued till the expiration of thirty minutes, when a second dose of the same quantity was given with the same well-marked results. And in two hours from the time that I first saw the case there were no unfavorable symptoms existing. I visited the boy the next day, when I found him still convalescing. He complained of some soreness along the spine, and a giddiness of the head; all of which passed off within the next twenty hours, leaving him free from all complaint."

ART. 30.—*On Chorea and its affinity to Rheumatism.*—By Dr. A. B. SNELL.

(*New York Journal of Medicine*, Nov., 1856.)

The object of this paper is to support the theory hinted at by Simon, that chorea, like rheumatism, is essentially a humoral disorder, depending for its cause upon some qualitative changes in the blood; that the materies morbi is generated in the system as a product of malassimilation or vicious metamorphic action.

That rheumatism is a blood-disease there cannot now be the possibility of doubt or denial, and, although the cause which gives rise to it has not received actual demonstration, it is none the less established that it depends upon a poison in the blood. Indeed, the researches of modern science have almost positively ascertained it to be of a specific character, viz, lactic acid, a natural excretion of the skin.

The precise nature of the poison in chorea it would be premature, in the present state of our knowledge, to assert. We may, however, hazard the conjecture that, if not identical with that of rheumatism, it is something readily convertible into it.

Simon, the only person who has given us anything like a rational and scientific view of the subject, in his late work on pathology, says: "As regards the affinity between chorea and rheumatism it does not by any means appear that the humoral disorder is identical in the two diseases, since they are never coincident in their occurrence; but it seems rather that the material which collects in the blood, prior to an attack of rheumatic fever, and which by its explosive decomposition, subsequently evolves the numerous evacuations of the disease, may, while accumulating within the circulating current in its original form, become capable of producing that irritation of the nervous centres characteristic of chorea."

To illustrate how this theory is confirmed by facts, Dr. Snell subjoins brief details of four cases occurring in the practice of his father, which were taken without reference to any hypothesis.

CASE 1.—A girl, *æ*t. 10, whose father died of rheumatism, became slowly affected with chorea, for which the usual course of remedies, including iron, was administered, and she got comparatively well. The duration of recovery was, however, short, only to give way to a disease far more serious in its consequences. In about a month, acute rheumatism with its cardiac complications supervened with great intensity, and, in spite of treatment, she died.

Here we have a succession of phenomena which harmonize so completely with our theory of the disease that it is impossible to overlook them. Do they not clearly indicate to us the kindred nature of the two affections? Does it not appear that there is a constitutional diathesis here, which, being corrected for a time, again manifests itself in a new and modified form?

CASE 2.—This case is very similar to the first, except the patient is a girl, *æ*t. 16. The muscular agitation here was extreme. She could not control even her most voluntary movements. If she started for one part of the room, she was quite likely to find herself in another. Finally, it subsided, and well-developed rheumatism set in, and proceeded rapidly to her death.

The general features of this case are so much like those of the first, that there is nothing to be particularly commented upon.

CASE 3.—This is the case of a boy, *æ*t. 8, whose father is subject to rheumatism, and whose little brother of five years, has been afflicted with urinary deposit, probably of the lithates. He has been the subject of chorea and rheumatism at various times for three years, vacillating between health, chorea, and rheumatism. Twice has he been under medicinal treatment for chorea, and cured. After an interval of a month or so, rheumatism of a subacute character would show itself, keeping him from school and confining him to the house, and this, again, followed by the enjoyment of health, or at least by freedom from either disease.

CASE 4.—A young lady, *æ*t. 17, was attacked with chorea at the age of seven or eight, which continued three years—chorea in summer and rheumatism in winter. From ten to fourteen, she had slight attacks of chorea occasionally, but on the whole, enjoyed tolerable health until the fall of 1855, when she was attacked with acute rheumatism, complicated with endocarditis. She was confined to her bed all winter, but is now quite restored.

"The last two cases," says Dr. Snell, "exemplify the affinity of the two diseases in so clear and unmistakable a light, that the most sceptical would find it difficult to gainsay or raise an objection. We see rheumatism obeying the law of hereditary transmission; we see the offspring of rheumatic parents prone to chorea; we see the two blending together—chorea giving way to rheumatism, and rheumatism relapsing into chorea.

"Upon the whole, we cannot but believe that the simple and true views of their relation is to be found in the morbid condition of the blood which is admitted to exist in the rheumatic constitution. That the inflammatory affections of the fibrous tissues, as well as the spasmodic twitchings of the muscles and tendons, originate in the same specific disorder of the circulating fluids.

"In considering how much has been already achieved in this department of our science, we may confidently hope that the labors of the microscope and the advanc-

ing light of organic chemistry will, ere long, reveal to us the precise nature of the disorder. Until then it will be difficult to deduce philosophical principles of treatment. To check the further conversion of material in the blood—to destroy the poison or turn it into a harmless condition—or to anticipate the eliminative efforts of nature—these are indications which pathology would suggest, and these have already, in great part, attained the sanction of experience."

ART. 31.—*Treatment of Chorea by Splints.* By THOMAS L. MONAHAN.

(*Dublin Hospital Gazette*, Feb. 15, 1857.)

"On the 19th of December, 1856," writes Dr. Monahan, "I was requested to see Master S., æt. 13, who for the last two or three days was suffering from involuntary and tremulous motions of almost all the voluntary muscles. The parents being greatly alarmed, a consultation was agreed upon. With considerable difficulty the boy was taken to Dr. Stokes. He and I arranged that the usual anti-choreic medicines should be tried; in addition, the patient had the benefit of country air and tepid shower-baths. The remedies recommended were regularly administered for over three weeks, by an experienced nurse, without any amelioration of symptoms. I then had recourse to splints; the night they were applied the boy slept well; and on their removal in the morning, there was scarcely any involuntary motion of the muscles observed. By using the splints for a few days and nights, the boy was restored to convalescence. The relief obtained by their use was so sudden and striking, that neither the parents or patient could be induced altogether to dispense with them, lest the disease should return. The above is the only case of chorea in which I have used splints; they proving efficacious, after the failure of the usual remedies, induced me to report this case."

Dr. Monahan also refers to a former case, treated in the same manner and with the same results, of which the particulars are given in the "*Dublin Hospital Gazette*" for December 1st, 1855.

ART. 32.—*On the treatment of Laryngismus Stridulus by partial narcotism.*

By Mr. THOMAS PAGET.

(*British Med. Journal*, March 7, 1857.)

"If," writes Mr. Paget, "we have been correct in fixing upon teething as the one exciting cause of laryngismus stridulus; correct also in concluding that it becomes operative only through the excitability which is natural to infancy, but obtains in an exaggerated degree in certain individuals, it results that after the removal of the exciting cause, and taking care that no irritability of the visceral nerves shall add fuel to the fire; in fact, after lancing the gums, effecting a clearance of the bowels, and contriving a prescription, dietetic and medicinal, for the correction and prevention of acrimony in the bowels, we are left to what I believe to be our most important object, namely, the subjection of nerve-excitement by means of narcotics: we are left, in short, to deal with the mainspring of the disease, its predisposing cause. Upon the narcotic to be used, upon the mode of giving it, or the dose required, I need lay but little stress, especially since it is well known how varied is the susceptibility of individuals in reference to this class of medicines. Suffice it to say, that the drug I have most used is opium; that, beginning with small doses, and cautiously regulating them according to their effects, I do not stop short of producing a constant drowsiness and some slight pallor; that when this state is obtained, the paroxysms decrease in force and frequency, the infant is calmly sleeping its day away, no longer devil-torn, nor are its friends racked with anxiety; and that when the paroxysms have failed to occur for some forty-eight hours, which will usually happen in from three to six days, the drug is gradually withdrawn, the quantity taken off each dose being immediately restored if the attacks show the slightest disposition to encroach again. I may say, also, that to attain to the required effect I have usually been obliged to give to children four or five months old (the age at which the disease most commonly, perhaps, invades) from one to five minims of tincture of opium in a dose with four or six of sal volatile two or three times a day; or if in enemata, five to seven minims.

"The principle, then, I would enunciate as the object of treatment after the more

obvious ones, the removal of all causes of irritation, is the quieting of nerve-excitability—the drowning of hyperæsthesia in a guarded, gentle, yet decided narcotism. I think it probable I may find that there is nothing new in the treatment itself; that, in fact, others have for years pursued the same. It seems to myself so obvious a course that I should be almost surprised to find that it had struck me alone as the proper one. It is, however, the first time, as far as I know, that this principle has appeared in public.

“I have depended upon it for the period of twenty years and more; I cannot add, without losing a case; but I can say that it has saved many, or seemed to do so; and with the strictest investigation memory is capable of affording, I see no reason to doubt its safety, its efficiency, or the prudence of continuing it. I therefore adopt it in every instance that presents itself.”

ART. 33.—*On two cases of Tonic Spasms in the Hands and Feet.*

By Dr. CAR. TOBIESEN.

(*Norsk Mag. for Lægevidenskaben*. 1856; and *Dublin Quarterly Journal of Medical Science*, Feb. 1857.)

On the 12th of July, 1854, Dr. Tobiesen was called to see two little boys, living at a short distance from Farsund, in Denmark, who were stated to be suffering from convulsions.

CASE 1.—The boy A—, æt. 8, in bed, crying, with pains in his hands and feet. His hands and fingers were in a state of constant flexion, and the flexors were tense and hard. On any violent attempt to extend them, painful contractions came on in the flexors; but he thought he felt relief from moderate extension; and, therefore, kept his father beside him engaged in this manœuvre. These more violent and painful contractions occurred spontaneously, at shorter or longer intervals, from a few minutes to half an hour, and again passed off in the course of from five to ten minutes, leaving behind them, however, a tonic contraction of the flexors. The feet were adducted, the toes were inflected, and the muscles of the calves of the legs were hard and tense. All these muscles, thus in a state of tonic contraction, were subjected to the same painful contractions as the hands, with, however, some variation, thus:—At one time all the limbs were contracted together; at another a foot and a hand; again, both hands or both feet; again, one foot or one hand alone. The power of motion was in other respects unimpaired, that is to say, there was no paralysis, and the sensibility was normal, unless possibly it was slightly increased. The temperature of the hands and feet was normal. During the painful contractions the respiration was labored, as was evidenced by long, asthmatic inspirations; the countenance acquired an anxious expression, somewhat indicative of suffering, but otherwise presented nothing striking. The temperature was normal; the pulse regular, not feverish; the color of the face was natural; there was no injection of the eyes, nor any heat of head, and consciousness was perfect; the voice and deglutition were natural. No abnormality was found on examining the spine; there was no pain on pressure of any vertebra; motion was free in all directions, and was unattended with pain; the tongue was clean; there was no thirst; the appetite was tolerable; the bowels were regular, and there was free evacuation of clear and light-colored urine.

CASE 2.—The boy N—, æt. 6, presented exactly the same tonic contraction in the hands and feet, accompanied by the same intercurrent, more violent contractions; but in this patient the latter were not so painful, nor were they attended with dyspnoea, only with crying and moaning. The other functions were regular, and in everything else this case resembled that first described.

The father stated that the children, who previously had always been healthy, bathed, on the 10th of July, in a pool or pond, formed by the rain collecting in an excavation in dry sand outside the house. The weather was at the time extremely warm, and the children had bathed at noon, in the greatest heat of the day, though it was blowing a little, as is always the case at that farm, which is situated close to the sea-shore. The cramps began on the following day, without the children having complained of feeling ill, and had continued uninterruptedly in the same manner, except during sleep, when the limbs retained, indeed, the same contracted position, but were at rest.

During the following three days the spasms gradually diminished—first the *jerks*—ings, then the tonic contractions—and, with the exception of some trifling *weakness*, the recovery was perfect in about ten days. The treatment consisted of diaphoretics, small doses of opium, and stimulating liniment to the affected parts.

The cases are accompanied by some speculative remarks, but they do not shed much light upon the matter.

ART. 34.—*Treatment of Neuralgia by Valerianate of Ammonia.*

By DR. DECLAT.

(*Philadelphia Medical Examiner*, Oct., 1856.)

In a recent number of the "*Bulletin de Therapeutique*," Dr. Declat relates several cases which seem to show that happy effects may be expected from the use of this compound.

CASE 1.—Madame the Marchioness of Fontanelle (the lady has authorized us to give her name), was attacked six years ago with facial neuralgia of the most severe description. The pain was first experienced while cutting a wisdom tooth, which was late in making its appearance. As this tooth came through in a wrong direction, Drs. A. Legrand and Jobert de Lamballe ordered its extraction. The pain was so violent that Madame de Fontanelle was unable to open her mouth, and they were obliged to give her chloroform.

After the removal of the tooth, the neuralgia still continued. All the ordinary means were employed to relieve it; internally sulphate of quinine, opium, belladonna, sulphate of strychnia, iron, gold, and quin-quina were administered, as well as external applications of opium plaster, blisters, morphia, dulcamara, chloroform, collodion, aconite, &c. &c.

Professors Sedillot and Velpeau saw the patient without being able to give her any relief. Professor Jobert de Lamballe proposed and obtained permission to apply the actual cautery over the course of the inferior maxillary nerve. This treatment, so terrifying to a woman, slightly lessened the acuteness of the pain, but failed to overcome it; and though suffering less, Madame de Fontanelle could neither eat nor sleep; being compelled, during at least six months, to have recourse to nutritive enemata, and tonic baths to preserve her health and life.

The waters of Plombières diminished, for a time, the frequency of the pains; during the second season, no benefit was derived from their action; the third, her malady was increased. She was in this suffering state when, on the 19th December, 1855, she was placed under my care.

The amelioration of her complaint produced by the waters of Plombières, during the first season, determined me to use Fowler's solution.

The invalid consented the more willingly to this means as she preferred death, she said, to insanity from suffering. One of her friends, also, Madame de Balzac, had written to her from Germany, that this remedy was in frequent use in the country in which she lived, and that it had, to her knowledge, cured more than one case of neuralgia.

From the 19th to the 22d of December, 12 drops in the morning, 12 drops at noon, and 12 drops in the evening of the following mixture were given her;

Fowler's solution,	$\frac{1}{4}$
Mint water,	$\frac{3}{4}$

On the 22d, there was a little improvement, but the tongue was red, and she suffered much pain in the stomach; Madame de Fontanelle would not consent to diminish the next dose, as the slight amelioration she had experienced made her sanguine of more complete relief.

On the 24th, vomiting, diarrhoea, cramps in the stomach and pains returned. We discontinued the medicine.

On the 3d of January, 1856, the agony was unendurable, and my patient was in despair. I tried the valerianate of ammonia.

A teaspoonful, taken in the evening, modified the pain at night, and rendered it bearable. Two teaspoonfuls the next day gave complete relief.

On the 6th of January, the patient could rise and speak.

On the 19th, she half opened her mouth and began to eat. The 3d of February,

Madame de Fontanelle came up to me smilingly, and welcomed me, saying, "Doctor, I have been well enough to dine in town; I can laugh; in society they look upon me as one risen from the dead." We gradually increased the dose to a dessert-spoonful morning and evening; the improvement now became so great that her countenance resumed an entirely different aspect, and her appetite came back as hope returned.

Finally, 'on the 6th of May, the pains having for several days entirely ceased, we suspended the use of the medicine. Several weeks past without a single twinge; but at the return of the first pain, the Marchioness snatched the bottle and took a dose of the valerianate.

From time to time, some shooting pains were felt; but every time the valerianate was resorted to they disappeared. The improvement continues, and there is nothing to cause us to anticipate that the remedy will lose its efficacy should the disease return.

The case given above is one of importance. From the first the patient had been attended with care, and even affection, by the most eminent physicians; for six years almost every known means had been employed, without results of any duration.

This case of neuralgia was much more obstinate and unmanageable from its being an hereditary affection. Madame de Fontanelle's mother had suffered fearfully from a similar neuralgia. Her brother, the Count of Essex (sic!), has had *tic douloureux* from his youth; and he is as well known in England from the great suffering he has gone through from it as from his high position.

Doctor A. Legrand has, throughout, watched this cure which he had pronounced hopeless six years ago; wishing himself to verify the value of the new medicine, he ordered it in the same doses to Madame de V——, whom he considered equally incurable. We know that the relief has been quite prompt; but we understand, from his having too rapidly increased the dose, that some cerebral disturbance was produced. These symptoms, however, disappeared as soon as the valerianate was given in proper doses. At present, Madame de V—— considers herself cured.

CASE 2.—M. E. Letellier accompanied his wife to Plombières. During his sojourn at the waters, in the beginning of October, he was attacked with a pain in the head; this pain extended to the muscles of the neck, passed through the top of the head, and lost itself in the branches of the facial nerve. It was impossible for the patient to raise his head from the pillow. Various remedies were tried at Plombières, but the pains increased and the sufferer was taken back to Paris.

The least movement was so painful to him that he could only bear the journey by having his head supported by Madame Letellier's hands.

Dr. Louis tried blisters, sage, quinine, and morphia, without any effect. To relieve his pain, M. Letellier took so much morphia as to fall into an alarming state of torpor.

On the 1st of October, 1855, we found the sick man in a state of extreme agony; he had not taken any morphia for two days, and suffered constantly.

On the same day, we began to use the valerianate of ammonia, two teaspoonfuls during the day in a half glass of *eau sucrée*. That night he had a little rest.

By continuing the use of the valerianate without increasing the dose, the patient was able to get up at the end of five days. On the ninth day he walked out to take a bath; he no longer felt any pain except in his neck and the back of his head; his nights became comfortable, his abilities and aptitude for business entirely restored.

Finally, from the 24th of the same month, we discontinued our visits.

We met him again recently, and he tells us that he has had some slight twinges, which are at once dissipated by a spoonful of the valerianate.

ART. 35.—*Case of long-standing Neuralgia cured by the local injection of Morphia.*
By Mr. JAMES OLIVER.

(*Edinburgh Medical Journal*, April, 1857)

This case is another illustration of the successful application of the practice recommended by Dr. Alex. Wood a short time ago (*vide* "Abstract"). The pain was seated in the abdominal parietes; it was of four years' standing; and all the

usual remedies had been tried in vain. It is somewhat remarkable that the only effect of the prolonged administration of chloroform was a slight salivation for two or three days. Mr. Oliver writes :

CASE.—“I was requested on the evening of Saturday, the 6th December, 1856, by Mr. P., a medical friend, to visit his wife, who, he informed me, was suffering severe pain in the abdomen. I found her in bed, twisting herself into all manner of shapes, and screaming from the intensity of the pain, which I discovered to be situated between the ribs and the groin on the left side. Her face was flushed, and expressive of great agony; her skin was cool, and her pulse beat sixty-five times in the minute. She had also been sick, and had vomited several times; but as her bowels had not acted for a week, this was easily accounted for, and evidently had no connection with the pain, which I at once diagnosed as neuralgic.

“On making further inquiries, I was confirmed in my opinion that the pain was of a neuralgic nature; for I learned that the patient had suffered from this pain periodically for four years; that at first it occurred at long intervals, and lasted but a short time; but that latterly it came on more frequently, was increasing in severity at each attack, and was of much longer duration. Various remedies had been tried at different times without effect, as the patient affirmed that she was not conscious of having ever experienced any relief from them,—a statement which was corroborated by her husband, who expressed himself as being at his wit's end concerning the case. At the time of my visit the pain had continued for six hours, and as opiates were contraindicated by the state of the bowels, I determined to try the effects of chloroform. After the administration of appropriate remedies for relief of the constipation, the patient was made to inhale chloroform, and was speedily under its influence. Anæsthesia was maintained for two hours, when the patient was allowed to awake; but the pain still continued, and was as vehement as ever. The inhalation was immediately recommenced, and I requested Mr. P. to keep it up for several hours before allowing Mrs. P. to regain her consciousness.

“On visiting the patient next morning, I was informed that she had been kept under chloroform till four o'clock A. M. She then felt easier, though not entirely free from pain, and fell into a troubled sleep, which continued for about two hours. On the afternoon of the same day, the pain returned with great severity, and chloroform was again administered, and continued for ten hours with the effect of partially removing it. This immunity, however, was of very short duration, as another and very severe attack occurred in about two hours—the patient at the same time eagerly crying out for the chloroform, which was again administered. From this time, the morning of the 9th December, till the morning of the 14th, she was almost constantly under the influence of the anæsthetic, as the pain was never for a moment absent, and was so excruciating as almost to prevent her taking any nourishment when she was roused for a few minutes for that purpose.

“At 11 o'clock A. M., on the 14th December, at the suggestion of Dr. Simpson, whom I consulted concerning the case, about sixty drops of the Sol. Mur. Morph. were injected with Dr. Alexander Wood's graduated syringe into the cellular tissue of the part affected, and in a few minutes the patient fell into a profound sleep. At 7 o'clock P. M., she was roused, and, after swallowing a cup of tea, immediately fell asleep again, and remained in that state till about 8 o'clock next morning. On awaking, she looked round with a cheerful countenance, said she was entirely free from pain, and expressed an urgent desire to have some breakfast immediately. Mrs. P. was ordered a ferruginous tonic for a week or two after this attack, and is now in the enjoyment of better health than she has possessed for a very considerable time. I saw her about ten days ago, and she feels deeply grateful for being relieved by such simple means from a very painful disease, and one that rendered her life miserable for the last four years.”

ART. 36.—*On the pathology of some forms of local Nervous Disorders.*

By Dr. GEORGE ROBINSON.

(*Newcastle and Gateshead Pathol. Transactions, Session 1855-56.*)

Perhaps in no department of medicine has the progress of sound pathology been more rapid, or its development more conducive to practical improvements, than in disorders of the nervous system. Nor have any modern advances in medical science

more clearly and forcibly demonstrated the inseparable dependence of pathology and therapeutics upon physiology, than those in question.

Without the light cast upon the physiology of the spinal cord by the researches of Sir Charles Bell, how confused would still be our ideas of the nature and causation, how erroneous our interpretation of the symptoms, of many important local disorders of sensation and voluntary motion. Or if deprived of a knowledge of that great law of excitomotory action, by means of which the genius of Dr. Marshall Hall has connected an immense number of remote, and apparently inconsequential phenomena, how feeble and pointless would still be our efforts to remedy many of those convulsive diseases which originate in distant, and comparatively trivial sources of irritation.

Seeing, then, that the study of the laws of healthy nervous action has been found the most efficient means of advancing our knowledge of the disorders of that class of functions, we are encouraged to persevere in the attempt to apply to the elucidation of this subject, every remaining physiological principle yet unappropriated to the purpose. And as such a physiological law—one of considerable importance in connection with the healthy, and consequently with the disordered, action of the cerebro-spinal nerves—does exist, while its pathological and therapeutical relations have hitherto received but little consideration, I may be excused for very briefly adverting to them.

A great and fundamental error will, if I mistake not, be found to pervade most writings on practical medicine, in reference to the physiology of the cerebro-spinal nerves. For they are generally assumed to be, and represented as, mere passive cords, conveying sensation and voluntary motive power through an inherent conductive capacity, analogous to that which, in a copper wire, induces the wonders of the electric telegraph.

It is undoubtedly true that the nerves do possess such a conducting power; but, for that power to act, vital as well as physical conditions are necessary. The nervous centres may be uninjured—the nerves themselves structurally whole—their continuity with the brain and spinal cord perfect—and yet there may be an utter absence of sensation and voluntary motion in the parts supplied by these nerves. And, in fact, unless one all-important vital condition be observed, the cerebro-spinal nerves, with all their exquisite organization and carefully-arranged connection with the great centre of thought and feeling, will exist but as dead cords, insensate and powerless, incapable alike of transmitting the mandates of the will, or the monitory vibrations of pain-producing injury. That condition, it is scarcely necessary to add, is a constant and normal supply of arterial blood to the nutrient vessels of the nerves.

Now the demonstration of this law, happily, does not rest upon any indirect or circuitous process of reasoning; it is susceptible of direct ocular proof.

If we suddenly and completely obstruct the aorta of an animal, we observe that the hinder extremities are instantly paralyzed, and on withdrawing the obstructive pressure from the artery, their sensitive and motor powers re-enter the nerves, simultaneously with the wave of arterial blood. Nor are there wanting evidences of the operation of the same law in man. When Sir Astley Cooper tied the abdominal aorta, the lower extremities were paralyzed, while severe pains were experienced in the arms and upper part of the body. And the numbness and diminished muscular power in the leg, after ligature of the femoral artery, illustrates the same principle. In like manner, the application of intense cold, by inducing a retardation, and ultimately stagnation of the blood present in the capillaries supplying the cutaneous nerves, benumbs the parts; and is accordingly employed for the purpose of diminishing or preventing the pain incident to certain surgical operations.

Now, this physiological principle once being recognized, it follows as a legitimate inference, that since the proper circulation of the blood in the capillaries of the nerves is essential to the healthy action of the latter, any irregularity in that local circulation must necessarily induce corresponding disorder in the functions of the nervous structures of the part. And if we exclude those cases in which something like actual inflammation of the investing cellular tissue, or sheath of the nerves, apparently exists, as in some forms of neuralgia, sciatica, &c., there will still remain a very great number of disorders, characterized by either an exalted or an enfeebled condition of local nervous energy—giving rise to pain on the one hand,

and to defective motor or sensitive power on the other—the majority of which, I venture to think, are very often connected with corresponding irregularities in the local circulation.

I shall not at present enter upon an examination of the various facts and arguments which might be adduced in support of this opinion; but I shall conclude with simply mentioning two practical facts which tend to support, while they themselves receive confirmation from, the pathological views in question, viz.:

1. The advantage so frequently experienced, in painful local affections, by inducing a derivative action, and thus relieving the local determination of blood to the nerves of the part, whether it be by the restoration of suppressed catamenia, or other accustomed discharge, or by promoting the equal distribution of arterial blood throughout the system, or by stimulating external applications, &c.

2. The equally marked benefit which results in cases of local enfeeblement of nervous power, from the use of friction, the douche, warm clothing, exercise, and generally from the adoption of all those hygienic and remedial measures which tend to improve the quality of the blood, while they, at the same time, impart vigor to its general and local circulation.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 37.—*Five cases of Tracheotomy in Croup, with remarks on certain points connected with the Operation.* By Dr. FULLER, Physician to St. George's Hospital.

(*Medical Times and Gazette*, Feb. 7, 1857.)

In this paper (which was read before the Medical and Chirurgical Society, 27th Jan., 1857), Dr. Fuller begins by narrating the particulars of five cases of inflammatory croup, for the relief of which tracheotomy was performed in St. George's Hospital. In each instance the operation was deferred until the last stage of the disease, when every remedy had failed, and death was imminent. In two of the cases the operation was successful in saving life; in three it failed of its object. Four of the patients coughed up a considerable quantity of mucus or false membrane through the artificial opening, and received immense relief from the operation; while the fifth was nearly moribund at the time of its performance, and expired almost immediately afterwards. Dr. Fuller remarked that the success thus obtained is highly satisfactory, and that, unless these recoveries are quite exceptional, tracheotomy ought to be had recourse to when other remedies have failed. He admitted, however, that the inferences derivable from such a limited number of cases are not of themselves sufficient to determine the propriety of the operation, and he therefore proceeded to discuss the question generally, and endeavored to bring together such facts as should lead to a decision—1st, as to whether the operation of tracheotomy is justifiable in any case of croup? 2d, if so, under what conditions, and at what stage of the complaint? 3d, whether the existence of certain symptoms or other circumstances ought not to cause us to hesitate in recommending its performance? 4th, whether any, and what medical treatment is necessary after an opening has been made into the trachea? With a view to a correct appreciation of the subject, Dr. Fuller began by referring to the difference existing physiologically and pathologically between idiopathic inflammatory croup and the diphtheritic form of the disease, which commonly prevails in France, and he pointed out that the objection usually urged against French statistics of tracheotomy in croup—viz., that diphtheritic cases are much more favorable for the performance of the operation than are the croup cases usually met with in this country—has no foundation in fact. He called attention to the circumstance that diphtheritis is often accompanied by glandular swellings in the neck, and œdematous fulness of the throat, whereby the operation is rendered much more difficult than in inflammatory croup, and that the type of the accompanying fever is so low as often to destroy life, quite independently of any affection of the air-passages. He then proceeded to show, by reference to 483 cases in which tracheotomy had been performed for the relief of croup in France, that the operation had proved eminently successful in the hands of French surgeons; and he reminded the society that, inasmuch as the condition of the throat externally, and the nature of the accompanying fever in diphtheritis are by no means favorable to the operation, the success which has attended it can

be explained away only on the supposition, often put forward by English writers, that in France the disease seldom extends into the trachea and bronchi, and is rarely accompanied by bronchitis or pneumonia. The fallacy of this supposition he then proceeded to demonstrate by reference to the writings of French authors, and to the recorded results of the post-mortem investigation of 311 fatal cases of croup in France, and he showed that in regard to its pathological effects, diphtheritis, when accompanied by croupal symptoms, does not, as compared with inflammatory croup, present any greater prospect of success for the operation than it does in the character of its accompanying fever, or the condition of the throat externally. Having thus established the success of the operation in the hands of French surgeons, and the absence of any special cause for that success, Dr. Fuller proceeded to inquire into the circumstances which have led to the disrepute of the operation in England. These he traced to theoretical objections founded on the pathological results of the disease, to the almost unanimous and unqualified condemnation of the operation pronounced by successive English writers, and to the ill success which had attended the operation in the few cases in which it had been practised prior to the publication of their respective works. He insisted, however, that theoretical objections are of little value as compared with the results of practical experience, and he therefore appealed to that source for information on the subject. He showed, by reference to statistics derived from the Hôpital des Enfants Malades, at Paris, that whereas out of the first hundred cases operated on at that institution one only recovered, a more extended experience in the mode of performing the operation, in the precautions requisite to insure success, and in the carrying out of the necessary after-treatment, has led, since 1850, to the saving of 47 out of 215 cases; or, in other words, to the rescuing from death of nearly one out of every four patients. He argued thence against those persons in this country who condemn the operation simply because it is opposed to their preconceived notions, or has proved unsuccessful in the few instances of which they are personally cognizant. Further, he showed that even in Great Britain the recorded results of the operation afford a fair amount of success.

Twenty-two cases only have been recorded in England, and in no less than eight of these life was saved by the operation; and although, doubtless, many unsuccessful cases have occurred which have not been placed on record, still Dr. Fuller argued, that, if life can be saved by operative interference, even in a small proportion of instances, the chance afforded by the operation ought not to be withheld where all other means have failed, except under some peculiar circumstances. Dr. Fuller next proceeded to dispute the propriety of having recourse to tracheotomy at an early stage of the disease. He showed that patients in the second stage of croup will sometimes recover under proper medical treatment, even when those symptoms appear to be desperate; and, on the other hand, that the theoretical objections commonly urged against deferring the performance of tracheotomy until the third stage of the disease, have no foundation in fact. In proof of this, he appealed to the results of the five cases which have fallen under his own observation at St. George's Hospital, as also of many of the other cases on record; and, further, to the corroborative evidence afforded by the recent change of opinion evinced by MM. Trousseau, Bretonneau, and others, who formerly were most zealous in their advocacy of an early performance of the operation, and who now defer it until a much later stage. Dr. Fuller condemned the indiscriminate performance of tracheotomy in croup. So much danger and difficulty attend the operation, even in favorable cases, that he considers it almost necessarily fatal if the patient is of very tender age, or has been out of health prior to his attack of croup; if his illness has been preceded by pneumonia or severe bronchitis; if he is suffering from any exanthematous or other disorder; and, further, if he is in such a position of life, that his parents are unable to secure for him proper skilled attendance night and day. He spoke of the gradual sinking sometimes observed in fatal cases, many hours after the operation, whilst all the symptoms are progressing favorably, as analogous to the sinking which occasionally takes place, under similar circumstances, in persons who have been partially asphyxiated; and he attributed it in part to pulmonary collapse, and in part to nervous exhaustion consequent on the long-continued struggles for breath. He referred to the use of tracheal tubes of too small a calibre, or of improper construction, as one great cause of the failure

of the operation; and, as another, to the neglect of proper after-treatment, or to the administration of improper remedies. He pointed out, that, in almost all the fatal cases on record, wine and brandy had formed the chief, if not the sole, medicaments; whereas, in almost all the successful cases, calomel, antimony, and the measures which are considered useful before the operation, were steadily persevered in afterwards; and he called attention to the fact, that the depression which accompanies the last stage of the disease, in which alone he recommends the operation, is the depression of asphyxia, which is to be relieved by the free admission of air, and not by the administration of stimulants. Here commended that the trachea-tubes be made somewhat larger, shorter, and less curved than those in common use; that the outer canula be shorter than the inner one, and that both be of the same diameter from one end to the other, but that the outer one, instead of being made of one piece, as at present, should be divided longitudinally into two blades, flattened towards their inferior extremity, so as to come into close apposition, and to admit of easy introduction into the trachea. These blades should be made to open like the blades of a dilating bivalve speculum, so as to admit, when fully expanded, an inner tube of uniform diameter throughout. This arrangement could not only conduce to keeping the inner tube clear of mucus, but would render serious obstruction to the respiration well-nigh impossible, inasmuch as if the inner tube were to be clogged in any way, and the extremity of the outer canula were to be also choked with mucus, the chink existing between its expanded blades would provide a free passage of air immediately on the withdrawal of the inner tube.

ART. 38.—*On Œdema Glottidis, resulting from Typhus Fever.*

By Dr. T. A. EMMET.

(*American Journal of Medical Science*, July, 1856.)

Œdema glottidis, according to Dr. Emmet, may occur in two forms as a secondary affection of typhus: one, the result of simple debility; the other, a consequence of typhous deposit and subsequent ulceration. In that form which results from debility, the infiltration may take place so rapidly as to cause almost instant death: in the other form the change takes place more gradually. In Dr. Emmet's opinion œdema of the glottis is a much more common sequel of typhus than is usually supposed, and he says that he met with thirty instances in 1931 cases of typhus, twenty-three of these instances being the consequence of typhous deposit in the larynx. He says, moreover, that coexisting bronchitis will frequently render the performance of laryngotomy or tracheotomy impracticable. These views are supported by cases.

ART. 39.—*On the Pathology of Catarrh.* By Dr. H. SALTER, F.R.S.,
Assistant-Physician to Charing-Cross Hospital.

(*Lancet*, Jan. 3, 1857.)

What Dr. H. Salter endeavors to show is this, that the symptoms of catarrh depend on a specific animal poison; that they are attributable either to the material presence of this poison circulating in the blood, or to the irritation which it produces in those organs which are its constituted eliminants. He believes that the arrest of the function of the skin, from exposure to cold, throws back into the circulation that which ought to have been eliminated as the cutaneous excretion; that this, either by itself, or by ulterior changes which it gives rise to in the blood, induces a condition of toxæmia; that the vicarious emunctory for the correction of this state of blood-poison, by the elimination of the material for whose excretion the skin has been temporarily rendered unequal by cold, is the respiratory mucous membrane; that the principal local symptoms—coryza, tonsillitis, bronchitis—depend upon the vascular changes in this membrane induced by this exceptional excretory function, and possibly by the irritation of the poison materially present thereat; that as long as the blood is thus contaminated the fever symptoms persist, and that its depuration is immediately attended by their abatement.

"Now, what warrant," says Dr. Salter, "does the clinical history of catarrh give for such an interpretation? I think it warrants it in two ways,—on *physiological* grounds and on *pathological*, and I will now proceed to show you how.

"The physiological argument rests upon the following postulates, which are capable of complete demonstration :

"1. That the vigor of secreting function and the amount of its results are affected by the quantity of blood supplied to the secreting organ.

"2. That cold is an agent that *exsanguines* organs to which it is applied, and depresses their circulation.

"3. That the skin is a great superficial gland, constantly carrying on an active secretion, and peculiarly amenable to the influence of cold.

"4 That that which ought to be, and is not, eliminated, becomes, by being thrown back upon the circulation, tantamount to something introduced from without, and is a virtual poison.

"Grant these postulates, and the theory of catarrh which I have above enunciated follows as an inevitable conclusion.

"The pathological argument rests partly on the *clinical history* of catarrh, and partly on *analogical grounds*.

"1. The clinical history of catarrh, I think, clearly suggests such a pathology as I have propounded. To take one of its commonest incidents :—A man gets wet feet to-day and shivers ; he goes to bed, and to-morrow he wakes with a sore-throat, and can hardly swallow ; he knows beforehand that such will be the case, and it is (in persons liable to quinsy the throat affection is almost always preceded by a recognized exposure to cold, which they fear accordingly). Now, how can these symptoms, the wet feet one day and the sore-throat or chest the next, be connected except by the links which the theory I have suggested supplies—by the suppressed cutaneous action, the consequential blood contamination, its vicarious depuration by certain parts of the respiratory mucous membrane, and the inflammation of these parts from the presence of the morbid material in them. The parts—the feet and throat—are at the opposite ends of the body ; they are not physiologically connected, and pathologically only in the way that I have mentioned.

"2. The analogical grounds with which pathology furnishes us, for such an interpretation of catarrh as I have suggested are—

"a. That the symptoms of catarrh are of exactly the same *kind* as those of acknowledged blood-poison diseases.

"b. That other diseases show us that where the depressed action of one organ has contaminated the blood, the contaminating material is eliminated by another.

"The symptoms of diseases depending on specific blood-poisoning, such as typhus, scarlatina, measles, are of two kinds—*general*, depending on the impression made upon the nervous system by the poison, and *local*, from the irritation, inflammation, or whatever it may be, of the excretory organs, set up by the material presence of the poison they are attracting to themselves, and draughting away. Now, the symptoms of catarrh are just such. The *general* symptoms—the malaise, the lassitude, the anorexia, the general aching, the enfeebled and quickened circulation, the subsequent reaction, &c., are those of fever. And catarrh is a fever. And there is one fever to whose initiatory symptoms the general symptoms of catarrh bear a special and a very close resemblance, and that is *typhus*. And this is a point to which I would direct your particular attention, for it is one to which I have never seen or heard any reference, and one of great practical importance ; for the alternative of the two cases is, as far as prognosis goes, so widely divergent,—the one disease a bagatelle, the other full of danger,—and consequently the discredit you would incur with the uninitiated and undiscerning in case of mistake so great, that you cannot have it too clearly impressed on your minds. I know of no two conditions more easily confounded than the early symptoms of fever and severe febrile catarrh ; I believe they are sometimes, for a day or two, actually not to be distinguished. Very lately I pronounced a case, in private practice, to be a mere rheum from exposure to cold, which in a few days turned out to be typhus, and several cases I have thought to be incipient fever that have turned out mere catarrh ; one such case, and a very striking one, I shall relate to you presently when speaking of another point—the diagnostic value of the *labial herpes*. I do not mean to say that most or a large proportion of cases of catarrh are capable of being confounded with the initiatory symptoms of fever, but that many are, and especially those cases in which the general symptoms are strongly marked, and the local but slightly. Indeed, it is in the general symptoms—that peculiar condition of the

nervous and vascular systems—the headache, lassitude, aching, want of appetite, thirst, loaded tongue, pallor, quickened and feeble pulse, drooping eyelids, &c.—that the resemblance to fever exists. But the analogy of the symptoms of catarrh to those of undoubted blood-poison diseases is further borne out by the *local* symptoms, which, as is the case in all specific-poison fevers, are situated in organs possessing an excretory structure and function, and therefore capable of acting as emunctories. The respiratory and faucial mucous membranes are the chief seats of local mischief; their inflammation is accompanied and followed by an increase of their secretion, and a remission of the general symptoms.

"But, you will tell me, there is one link deficient in my chain of analogies that binds catarrh to the fevers depending on specific poisons. 'Where,' you will ask me, 'is the eruption, where is the representative of that cardinal symptom of the poison-fevers?' I reply, 'In *herpes labialis*.' I believe this to be the specific eruption of catarrh. I have never seen a case of it (and I have very carefully looked out for it for several years) which has not been preceded by catarrhal symptoms; I know numbers of people, and I myself am an instance, who never have catarrh without it; I do not say never have coryza or a little cold in the head, but never have regular catarrh, attended with feverish symptoms, without the attack being wound up by the appearance of a crop of herpes labialis. This is generally recognized; the public know it well enough; and the appearance of the eruption is always recognized with the exclamation, 'Dear me, what a cold you have got!' It is a well-known fact that it is very common in pneumonia, but, as far I have seen, those cases of pneumonia in which it occurs are always of catarrhal origin, inflammation of the parenchyma of the lungs being a not uncommon complication of catarrh,—the most common, in fact, next to that of the faucial and respiratory mucous membranes. I do not mean to say that herpes labialis as certainly accompanies catarrh as the eruption of small-pox and scarlatina do those fevers respectively; many people, doubtless, never have it; but I believe that a great number always do, and that though its absence is not *negatively* conclusive, its presence is *positively*, that its appearance is diagnostic. You all of you know how constantly I am calling your attention to it, and how invariably correct a diagnosis based on it is. I have had several cases lately, of the nature of which I did not feel certain, decided by the eruption of a crop of the characteristic vesicles around the mouth; one of these cases I will relate to you.

"Together with the vesicles upon the lip, there commonly, almost constantly, occurs a little ulcer or two on the tongue, one generally being at the very tip. These ulcers are herpes, only occurring on the mucous membrane instead of the skin. Each of them has been the seat of an herpetic vesicle, and if you catch them early, you may see the little vesicle before it breaks. It seems to be the law of herpes, and one can easily understand it, that whereas when it occurs on the skin it terminates in a sort of clear, honey-like crust (*h. labialis* and *zoster*), when it occurs on mucous membrane it terminates in ulcer (*h. preputialis*), the epithelium is destroyed by the vesicle, a raw surface is left, and the exudation, which on the skin dries and becomes protective, on the mucous membrane is kept moist and removed with the secretion of the part, so that the denuded portion remains open and unprotected. I have often surprised patients who have had catarrh, with herpes on their lip, by telling them that they have an ulcer on the tip of their tongue; they commonly have; but telling them of it without having seen it seems to them like conjuration, and they cannot make it out. I have sometimes seen, in cases of catarrh, the characteristic ulcers on the tongue, with none of the eruption on the lip—the herpes has fallen on the mucous membrane exclusively—but this is not common.

"The conclusions that I have come to with regard to this eruption are—

"That it is probably always symptomatic of catarrh.

"That those persons who ever have it with catarrh always do with every genuine attack.

"That some persons never have it; that its presence, therefore, is positively, but its absence not negatively diagnostic.

"That its favorite seat is the debatable ground between lip and skin—the edge of the lip, generally the lower, and near the middle; but that it frequently occurs on the tongue.

"That its usual time of appearance is on the fourth day.

"That it is always attended with a remission of the general symptoms.

"That the exuberance of the crop of vesicles bears no relation to the severity of the attack of catarrh."

ART. 40.—*On the use of Belladonna in Hooping-cough.*

By Dr. L. TURNBULL.

(*Pamphlet. Philadelphia, 1855.*)

The following remarks are taken from a paper called "Hooping-cough, its History, Nature, and successful Treatment," which paper was read before the Philadelphia County Medical Society, March, 1855 :

"During the whole stage of the disease," says Dr. Turnbull, "demulcent drinks should be freely administered, such as flax-seed tea, barley or rice water. When fully satisfied that the inflammation has been subdued, indicated by a slower pulse, less heat of skin, and no active congestion of the brain or lungs, I have then followed the treatment with belladonna, and my success with this remedy has been most gratifying. Before administering it I tried, in vain, the free use of cochineal in combination with alkalies, assafoetida, opium, alum, hydrocyanic acid, &c. In every instance in which the system was fully brought under the influence of the belladonna, indicated by dilatation of the pupil with confused vision and reddened skin, I was enabled to check the annoying cough and hoop of thirteen children during the months of May and June, 1854, and seven cases since that time, making twenty cases in all, eight males and twenty females; the youngest was nine months and the eldest ten years.

"The following was the method followed: the system being prepared by reducing the inflammation by the means before spoken of, obtain, if possible, English extract of belladonna, fresh and good; let the extract be triturated with water or simple syrup: if it is to be kept for some time, add a small quantity of alcohol. The dose for a child three months old is the sixteenth of a grain every three hours, to a child one year one-eighth of a grain, and so to other ages in proportion.

"Inform the parent or nurse of the change it will produce upon the eye, also that it mayadden the skin. When full dilatation of the pupil is brought about, the medicine is to be intermitted until it has gone off again; the belladonna is to be administered in slightly increasing doses, so as to keep the child under its influence for several days or until the paroxysms are checked, which will usually occur towards the sixth or eighth day of the second stage.

"In the twenty cases cured by the use of the belladonna the cough and hoop returned in a few cases on exposure to cold, or in disagreeable, windy weather; but, by combining the extract with syrup of ipecacuanha, a few doses soon checked the cough and hoop; in only one case out of this number was it complicated with inflammation of the lungs, and this case recovered.

"The average duration of my twenty cases was ten days after the hoop had commenced, when the case was free from complications, which shows the great advantage of this treatment. The ordinary duration of the disease, when treated in the usual manner, is from one and a half to three and a half months; even by prussic acid, or the application of nitrate of silver, the average given is from two to three weeks. It is stated by Dr. Gibb that, with the use of nitric acid, the average duration was only six or seven days. Several physicians who have used this remedy, however, do not find such favorable results from its use."

ART. 41.—*Two cases of Thoracentesis.* By M. ARAN.

(*L'Union Médicale*, Nos. 147, 148; and *Med.-Chir. Rev.*, April, 1857.)

These cases occurred at the Hôpital St. Antoine, under the care of M. Aran. The patients were men respectively of the ages of twenty-six and thirty-nine years. In the first, the pleurisy affected the left side, and the effusion was so considerable as to force the heart above an inch (three centim.) beyond the right margin of the sternum; in the second the right side was affected, and the heart was pushed over to the left, so that the heart-dulness only commenced at the left edge of the sternum. The dislocation of the heart forms one of the chief sources of the danger accompanying pleuritic effusions, and may therefore be regarded as an argument

in favor of paracentesis. Paracentesis was accomplished in the former case a few days after the patient's admission to the hospital, when he had been about four weeks ill. One thousand two hundred grammes (above twenty-six ounces) were evacuated; the immediate relief was great, and an entire recovery followed, so that he was discharged cured three weeks after. In the second case, the operation was performed four weeks after the commencement of the illness, and a week after the patient's admission. The amount of fluid evacuated was two thousand five hundred grammes (about fifty-five ounces). A fortnight after, the patient is reported to be doing perfectly well, being retained in the hospital simply as a matter of precaution.

In neither of the cases was there much fever on the day on which the puncture was made; the pulse was eighty-four in the first, sixty in the second patient; the former presented twenty-four, the latter twenty, respirations in the minute. They had some appetite, and probably neither patient considered himself dangerously ill; still, the extent of the effusion left no doubt that their malady was a very serious one. The recovery was the most rapid and complete, as regards the expansion of the compressed lung, in the second case—still, in both, the lung that had been affected was restored nearly to the normal condition. The first at his discharge is reported to have retained only a slight dulness, with a somewhat feeble respiratory murmur on the left side; while the second, eight days after the operation, presented nothing but a slight diminution of the respiratory murmur at a circumscribed spot at the lower and outer part of the affected side.

ART. 42.—*Remarks on Paracentesis Thoracis, based on an examination of 132 reported cases.* By Dr. JOHN A. BRADY, of Brooklyn, N. Y.

(*New York Journal of Medicine*, March, 1856.)

In this paper, Dr. Brady reports, in considerable detail, a case of pleuritic effusion in a man aged 25, occurring first upon the right, and subsequently upon the left side. He was treated with marked success by repeated blisters, slight pytalism, followed by acetate of potash and iodide of potassium, &c. After several months, he began to decline in health without any perceptible cause, and in spite of medication. He died from the exhaustion of delirium following an overdose of laudanum, which he had incautiously swallowed. On examination, the left lung was found to be healthy; the right was firmly united to the walls of the chest by old and very dense bands. The upper portion was healthy and permeable to air; but the lower portion was condensed and perfectly solid. No tubercles were found in either lung, and the cavity of the thorax was free from fluid.

In the course of his reflections on the above case, Dr. Brady had been led seriously to regret that the operation of paracentesis was not performed. For, notwithstanding the treatment instituted caused the absorption of the fluid, the process was so tedious and slow, and the pressure of the fluid continued so long, as to impair seriously the functions of the lung, so that, even had he lived, it was doubtful whether the lung would ever have attained its former size and usefulness. His attention having been directed in this manner to the subject of paracentesis thoracis, he has been led to collect together all the cases of empyema and hydrothorax reported in the British and American journals, in which the operation has been performed. And the remainder of his paper is devoted to an analysis of the 132 cases collected, together with a brief examination of some of the points connected with the operation.

Of the 132 cases in which the operation was performed, it resulted in complete recovery in seventy-nine cases; fourteen were relieved; thirty-seven died; in one the result was unknown; and in one no effect whatever was produced. Of those who died, eleven were carried off by phthisis; four were sinking, and beyond the probability of recovery when the operation was performed; one died from the effects of an opiate; in one case the fluid could not be reached; and in one a doubt existed in the mind of the medical attendant, whether active treatment after the operation might not have saved his patient's life. This leaves only nineteen remaining whose deaths could by any possibility be attributed to the operation. It appears also that in the majority of the cases reported, the operation was not resorted to until the hope of relief from any other source had failed, when the lung had be-

come more or less altered in structure, owing to the pressure of the fluid, and the patient's strength exhausted by the continuance of a painful and harassing disease. In all of the cases, with one exception, the removal of the fluid afforded marked, and in many cases entire, relief. There is but a single exception. In this case two operations were performed; the first of which afforded relief, but the second was attended with no such beneficial result.

Of those who were operated upon, the fluid had existed—

Less than 1 month in 15 cases.				Less than 7 months in 3 cases.			
"	2	"	19	"	8	"	3
"	3	"	12	"	9	"	5
"	4	"	8	"	2	years in	2
"	5	"	4	"	3	"	2
"	6	"	3	"	7	"	1

And in 55 cases the duration was unknown.

				Recovered.	Relieved.	Died.
The effusion was pus		in 52 cases, of whom	37	3		13
" serum		" 59 "	29	12		18
" sero-purulent		" 8 "	5	0		3
" unknown		" 13 "	10	0		3

Of those who died, the effusion had existed within 1 month in 2						
"	"	"	"	"	2	1
"	"	"	"	"	3	3
"	"	"	"	"	4	3
"	"	"	"	"	5	2
"	"	"	"	"	6	1
"	"	"	"	"	7	1
"	"	"	"	"	9	2
"	"	"	"	"	2 years in	2
"	"	"	"	"	a long time	1
"	"	"	"	"	unknown	19

The largest amount evacuated during the whole treatment was of pus, 22½ lbs.; serum, 15 pts.: and the smallest, pus, 5 oz.; serum, 1½ oz.

The operation of tapping the chest for the removal of fluid collected therein, has been since the days of Hippocrates; and although one would think a sufficient length of time had elapsed since its practice began, for the profession to settle the question as to its usefulness and safety, still there is no operation within the province of the surgeon, concerning the practice of which there has been more controversy and difference of opinion than the one under consideration. Of late years the valuable papers of M. Trousseau, of France, Drs. Hughes, Cock, and Hamilton Roe, of Great Britain; and Drs. Bowditch, Wyman, and Pepper, of America, have done much towards convincing the medical profession of its practicability and safety in all cases where fluid has been thrown out in the thoracic cavity, the result of pleuritic inflammation. A careful examination of the result of their labors, proves that, in their hands at least, it has not been attended by any of those unpleasant and dangerous consequences, that had almost universally been attributed to it.

The objections urged against the operation apply almost entirely to it as performed in accordance with the method laid down in most works on surgery; but, as practised by surgeons of the present day, the operation is perfectly easy, safe, and practicable. The principal objection brought against the operation is, that by it air is admitted to the pleural cavity, and that its presence there compresses the lung, causes a decomposition of the fluid, thereby lessening the patient's chances of recovery; and that it also increases the inflammatory action already going on. These objections, if true, would divest the operation of much of its usefulness; but, although the admission of air cannot always be prevented, the quantity is so small when the operation is properly performed, as to cause no trouble whatever; on the contrary, it has been found to assist in the removal of the fluid—is not sufficient to compress the lung, and is readily absorbed in the course of a few hours. Dr. Bowditch, in speaking of this objection (*Am. Jour. Med. Sciences*, 1852), says,

"The admission of a small quantity of air does not necessarily cause trouble, unless it be frequently repeated, as in cases of pneumothorax and of puncture of the thorax according to the old operation." Dr. Fergusson says, "I have never seen any evil result arise directly from the admission of a small quantity of air;" and Dr. Hamilton Roe, in speaking of this objection, uses the following language, "In every case which has fallen under my observation, a considerable quantity of air entered into the pleura during the operation, and in some of them so freely as to excite all the physical signs of pneumothorax, but in none of them did it produce any permanently evil effect, a few hours being sufficient for its spontaneous removal; in one instance only did it cause even temporary inconvenience."

Another objector, Dr. Hope, says, "The operation is unnecessary, and that all cases in which this operation has been instrumental in producing a cure, the like result could have been attained without its aid;" and in proof thereof he cites thirty-five cases, cured by the use of mercury. This assertion experience proves to be untrue. If the fluid effused be simply serum, and the patient's constitution be not already broken down, and the amount effused be not too large, then if a judicious treatment be instituted a reasonable hope may be indulged that the fluid will be removed by absorption. But if, on the contrary, the amount of fluid thrown out is so large as to interfere materially with respiration, or it has accumulated so rapidly as to prevent absorption, then the operation must be resorted to.

When should the operation be performed? Most writers are of the opinion that the fluid should be removed at an early period of the disease: Drs. Hamilton Roe and Bowditch say it should not be allowed to remain longer than three weeks. When the fluid effused in the pleural cavity is serum alone, unless the quantity is too large, its absorption and consequent removal can be brought about, in a majority of cases, by the use of proper remedial agents. But if the quantity be so large as to threaten suffocation, or if the pleural sac is much distended by a rapid effusion, then the operation should be performed. It should be borne in mind that, if the fluid is allowed to remain too long, phthisis is almost certain to supervene; for that reason, the operation should not be too long delayed. If the matter be purulent, valuable time should not be lost in waiting until it is broken down and then absorbed, or until it establishes an opening for itself, but the operation should be performed immediately. Of course the above remarks apply to cases of uncomplicated hydrothorax and empyema. But even if phthisis be present, the removal of the fluid will, in many cases, afford considerable relief, and so lengthen the life of the patient. If possible all inflammatory action should be subdued before the operation is performed.

Before the operation of paracentesis is performed, an exploration should be made, in order to ascertain with certainty the character of the effusion. In regard to the exact locality at which the puncture should be made, discrepancy of opinion exists. Most operators, however, prefer the fifth intercostal space, about midway between the sternum and spine, or just posterior to the digitations of the serratus magnus. When the fluid points externally, the puncture should be made with a lancet in the most prominent part of the swelling. Several instruments have been invented for puncturing the chest, but a small-sized trocar appears to answer the purpose as well, and to be as safe as any other instrument; care should be taken to have its point perfectly sharp. Some operators make an incision in the integument first, but this does not appear to be absolutely necessary; a difference of opinion exists among operators as to whether the whole or only a portion of the fluid should be removed at once. This matter, however, must be left entirely to the judgment of the operator. If the effusion be recent—when the lung has not been compressed but a short time, no harm can result from allowing the fluid to be evacuated at once. If dyspnoea or syncope supervene, or air begins to enter the cavity, then the discharge should be stopped at once. In a majority of the cases reported, in which the operation was successful, the return to health was gradual and progressive.

It would, therefore, appear that the operation is perfectly easy, safe, and practicable, and that, although it will not in all cases cure the disease, it never fails to remove many of the most distressing symptoms.

. ART. 43.—*On the value of the Red Line of the Gum in the Diagnosis of Phthisis.*
By Dr. SAUNDERS, and Dr. J. C. DRAPER.

(*New York Journal of Medicine*, Jan., 1857.)

Dr. Theophilus Thompson, in his work on pulmonary consumption, in speaking of this red line, says, "Considerable attention to this inquiry has impressed me with the conviction of the frequent existence, in consumptive subjects, of a mark at the reflected edge of the gums, usually deeper in color than the adjoining surface, and producing a festooned appearance, by the accuracy with which it corresponds with the curve of the gingival border; this mark is in some patients a mere streak, in others, a margin, sometimes more than a line in breadth. In the most decided cases, this margin is of a vermilion tint, inclining to lake. As a general rule, the line is most distinct round the incisor teeth, but it is frequently apparent also round the molars. Dr. Saunders and Dr. J. C. Draper are not without a suspicion that the form of the mouth influences the direction in which the margin is most obvious; patients with a long upper lip applied closely over the jaw, often presenting around the incisors either no line, or one only slightly marked, while around the canine teeth this margin is well delineated. In toothless individuals, when the gums smoothly cover the sockets, no mark is observable, but when imperfect stumps remaining prevent the smooth adjustment of the surface, the streak is found."

The object of the following statistics is to test the utility of the red line as an element in the diagnosis of phthisis. The 451 cases from which they were taken, are all of the patients at present under treatment in the wards of Bellevue Hospital. Table No. I is intended to show the frequency of its occurrence, without regard to the disease. The terms used at the head of table are *no line*, *slight*, *good*, and *excellent*. The first is used when no trace of a line exists; *slight* is used when the line is faintly marked on three or four gums; *good* is used when the line is pretty well marked on the gums of the upper jaw; *excellent* is used when the line is full, plain, and very marked on all of the gums.

The whole number of cases examined (451), in whom the red line existed, is as follows :

TABLE NO. I.

No. of cases.	No line.	Slight.	Good.	Excellent.
451	106	96	175	74

Table No. II comprises 116 cases of phthisis, in all its stages. Under the head of stages, the numbers 1, 2, 3, are intended to denote the divisions used in describing this disease.

TABLE NO. II.

Stages.	No. of cases.	No line.	Slight.	Good.	Excellent.
1	26	7	3	9	7
2	21	4	5	8	4
3	69	17	17	21	14
Total,	116	28	25	38	25

From this we find one-fourth of the cases have no line, another fourth have it very slightly developed, leaving one-half in which it is plainly marked. It may also be observed that the stage in which the disease exists does not have any material influence on the line. Table No. III comprises all varieties of disease except phthisis.

TABLE NO. III.

No. of cases.	No line.	Slight.	Good.	Excellent.
335	78	71	137	49

In this table we find more than three-quarters of the cases have the line more or less developed, though only a little more than one-half have it well shown. This table would rather leave the impression, that this line occurs in most chronic diseases, as stated by Drs. Thompson and Frederick, oftener than in any other condition, though the following table conflicts with that opinion. Table No. IV com-

prises 37 cases of pregnant and recently-delivered women, in whom no pathological lesion existed.

TABLE No. IV.

No. of cases.	No line.	Slight.	Good.	Excellent.
37	5	6	11	15

In the 37 cases we see the line existing in 32, though only slightly in 6. The results of this table deserve some consideration, as it has been stated by most authors who have investigated the subject, that the line is peculiar to chronic blood-diseases; this view, however, is not sustained by the above table, as no disease existed in any of the 37. It should be remarked, also, that the line occurs more frequently and is better marked in the pregnant woman than in any cases examined. The number of cases at our command will not justify a conclusion; yet they may serve as a basis of further investigation. The question might be asked—May not this line be considered in connection with the other symptoms of pregnancy?

Table No. V comprises 32 cases of uterine disease, and is intended to show the difference between the physiological and pathological conditions of the uterus.

TABLE No. V.

No. of cases.	No line.	Slight.	Good.	Excellent.
32	14	7	10	1

In the 32 cases examined, there were nearly one-half where the line did not exist, and only one-third in whom it was pretty well marked. It may be observed that there is considerable difference between tables No. IV and V, the line occurring nearly in an increased ratio in the two conditions of the uterus, being only very well marked in a single instance when the organ is diseased.

Table No. VI is intended to demonstrate the influence of sex on the line.

TABLE No. VI.

	No. of cases.	No line.	Slight.	Good.	Excellent.
Female, . . .	234	57	55	80	42
Male, . . .	217	49	41	95	32

From this we see no marked difference in the frequency of its recurrence in the different sexes.

Table No. VII shows the influence of age.

TABLE No. VII.

Age.	No. of cases.	No line.	Slight.	Good.	Excellent.
Below 20,	48	21	9	10	8
20 to 30,	185	38	37	80	30
30 to 60,	199	42	44	78	35
Above 60,	19	5	6	7	1
Total,	451	106	96	175	74

Age exerts no influence on the occurrence of the line.

The following general conclusions may be drawn from the above statistics:

1. The red line, though it occurs frequently in phthisis and chronic blood-diseases, is by no means characteristic of them.
2. In pregnant and recently-delivered women, the line occurs more frequently and better marked than in any cases examined, and may, perhaps, deserve consideration in connection with that condition.
3. That age or sex exercise no influence on the existence of the line.

ART. 44.—*Of the nature of Phthisis and particularly of the Pre-tubercular stage.*

By Dr. E. SMITH.

(*Lancet*, Nov. 1, 1855.)

After pointing out the advantages of special hospitals in the study of diseases,

the object of the author is to show—1st, That the treatment of phthisis, in order to be commonly successful, must be in the pre-tubercular stage; 2d, That there is a pre-tubercular stage, which is capable of easy demonstration, and in which treatment would commonly prevent the deposition of tubercle; and 3d, That the nature of phthisis essentially consists in a lessened inspiratory action of the air-cells of the lung. He admits that phthisis is induced by a multitude of causes, but he affirms that the tendency of all these is towards exhaustion, and that they, although many, have one common mode of action in inducing the disease. He criticizes minutely the prevalent opinion, that phthisis is a disease of the blood, and proves that whatever may be the state of the blood in the disease, there is no universal condition of it which attends the origin of the disease, or which is really causative of it. The state of the system, which is one of the causes of phthisis, is one of both solids and fluids, and is to be expressed rather by a general predisposition to the disease than by the specific state of the part of the system—viz., the blood, in which the elements of the disease had never been found, or had been directly transmitted to another system. He also proves from his own investigation, that the function of alimentation was not at fault as causative of phthisis, by showing that the quantity of food taken in the early stage is equal to that in health; and by reference to the *feces*, solids in the urine, biliary and cuticular excretions, he showed that there was then no larger excretory waste than occurs in health. The lessened action of the air-cells he proved from the lessened vital capacity, feeble respiratory power, and lessened mobility in the early stage of the disease, the consequently lessened vesicular murmur, increased harshness of respiration and flattening of the chest, with or without slight dulness, indicative of atrophy of the lung. He also proved that the signs of lessened vesicular action are found in all those cases, which, by common consent, are said to be prone to phthisis, and mentions instances in his own practice at the hospital, in which the vital capacity was reduced to the extent of two-thirds, or half of the healthy quantity, without there being any evidence of the deposit of solid matter in the lung. This stage of lessened vesicular inspiratory action, without any evidence of tubercular deposition, he designated as the first stage of the disease, one in which every hope of success may be entertained from suitable treatment. The second stage was that of tubercular deposition, and the third, that of destruction of tissue, whether to the extent of softening only, or to the further degree of the formation of a cavity. He then proceeds to show the connection between the act of inspiration and the circulation through the lungs, and the importance of maintaining a balance between the systemic and pulmonic circulations, and explains the especial liability of the apex of the lung to tubercle, by a consideration of the mode of action of the lung, whereby the cells at the apex must at all times be less perfectly distended than those at the base, and, consequently, have less circulation and vital influence. He discards the notion of the deposition of tubercle in the lung from the blood, and having referred to Dr. W. Addison's theory of the formation of tubercle on the lung from degenerated epithelium, shows how readily the air-cell is rendered fit to be a receptacle of such morbid products when its action and vital influence are lessened or lost. The extreme liability of the lungs to the deposition was not from any question relating to the blood, but from a consideration of the peculiar action of extrusion and retraction of the air-cell (as he had demonstrated), and from the immense number of such filled receptacles as the air-cells of the lungs offered. He believes that phthisis and scrofula are distinct diseases, and that whilst they may be sometimes causative of each other, their co-ordinate occurrence was chiefly accidental. Dr. Smith also explains the occurrence of hæmoptysis before the deposition of tubercle, upon the principles now laid down, and points out the impropriety of any attempt to arrest it directly, and also of interfering with that degree of increased frequency of respiration and pulsation which Nature sets up as a prophylactic measure when the amount of circulation in the lungs is so greatly lessened as it is in all stages of phthisis.

ART. 45.—*On the Treatment for the arrest of Phthisis.*

By Dr. EDW. SMITH, Assistant Physician to the Hospital for Consumption at Brompton.

(*British Med. Journal*, Jan. 10, and Feb. 7, 1857.)

After having investigated the subject in a very careful manner, Dr. Smith has

arrived at the conclusion that alimentation is *not* at fault, since the quantity of food taken is equal to that in health, since digestion is good, and the waste of material not greater than in health, and that the respiration is at fault. The theory propounded is that the disease essentially consists in the lessened action of the air-vesicles, and that it is commonly due to anterior conditions of the general system of a depressing nature. These general conditions are in part, probably, certain atonic states of the nerves of organic life, and more particularly of the sets of those nerves and of the communicating branches of the cerebro-spinal system which preside over the involuntary and also the voluntary action of the lungs.

The treatment recommended may be summed up in the following sentence: Forced inspirations, out-of-door exercise, good and frequent food, sleep, early rising and retiring to rest, cool moist air, cold washing, moderate excitement of the mind, and medicinal tonics. There is also another, which may rather be considered a prophylactic of phthisis, and which, in his opinion, is of far greater value than the community at the present day admit; viz., athletic exercises, and country sports and games.

The means upon which Dr. Smith lays most stress is that of "mechanical distension of the air-cells to a degree beyond that which takes place perhaps in health, but certainly in the state of enfeebled respiration in which we find the patient. This may be effected by bodily exertion, which tends directly to increase the frequency and the depth of inspiration; and, as this mode is so consonant with our knowledge of the laws whereby health is maintained, no objection will be urged to it. But to my mind there is the objection that, in phthisis, whether before the manifest deposition of tubercle, or afterwards in the early stages of the disease, the pulse is frequent proportionately to the respiration; so that the respiration is to the pulse, not as 1 to 4, but as 1 to 5, 6, or 8. I have paid much attention to this matter in a long inquiry which I have prosecuted at this hospital, and am assured that, in the early stage of phthisis, the proportion of the two functions is commonly reduced. Now the pulsation is at least frequent enough, and it is not uncommonly too frequent; and hence we do not need to apply any remedies which may increase the rapidity of the blood-current. But exercise of body, and even the sitting and standing postures, do increase the blood-motion; and, although they at the same time increase the rapidity of breathing, they do it in a less ratio than the former. Whilst, therefore, bodily exertion may be useful, and is indeed necessary in giving more rapidity and depth to the inspiratory effort, it is not an unmixed good. But we must not forget that the quiet motion of the body, which is now said to be bodily exercise, does not excite the depth of inspiration sufficient for our purpose; and it is only when it becomes so great as is needful in athletic exercises that the desired result is attained. Hence the directions which we commonly give are of little avail, although the tendency of them is right. Yet, with the violent bodily exertion referred to, the rapidity of the blood-current is greatly increased, and at the same time there is a proportionate diminution in the deposition of material in the tissues, and in the due action of the air upon the blood in the lungs. Thus lessened growth of body occurs, with, at the same time, less vigor of vital processes, and a waste of material through the eliminating organs. This must result when the body is in health; but then the temporary evil is either easily borne, or is compensated by good; but when, in phthisis, at least in the tubercular stages, we find a tendency to a constant rapidity of current, and consequently to lessened growth of tissues, we must attach a greater degree of importance to it. The effect of much exercise in phthisis is, therefore, evil certainly, although, at the same time, it may be, but less certainly, good.

"Now, is it possible to meet this difficulty, and to find a mode whereby the depth of the inspiratory act shall be increased, and yet the rapidity of the blood-current not sensibly promoted? Perhaps not, in the fullest sense of the inquiry; but I think it may in a limited yet important sense. I refer to voluntary attempts at deep inspiration. This cannot be continually effected, since volition cannot be at all times directed to that end; and if it could, the very act would fatigue the system; but it may be for a limited period at a time: and the very instruction thus given, if properly explained, will induce the patient to guard against that shallow respiration which is so constant a feature of the complaint. Thus the mind would be directed to an object of value; the spirits would be excited by hope; and the

evils attending a listless and enfeebled habit of respiration would be in some degree guarded against. This object is doubtless attempted when the patient is directed to use calisthenic exercises, as the use of the dumb-bells; and there cannot be a doubt that the vigorous employment of such means may excite inspiration. But it is one thing to throw the arms about, and another to make that conducive to the deep inspiration. We must admit that, whilst the object is good, the practice has commonly defeated the object, and that perhaps in a great degree from the want of knowledge on the part of the patient to enable him to make his efforts efficient. Moreover, I am not clear but that sometimes, and, perhaps, frequently, the effort now referred to lessens the frequency, and without increasing the depth, of inspiration; for nothing is more common than for us to hold our breath when making any unusual voluntary exertion.

"I think that nothing less than direct voluntary attempts to breathe deeply would effect the object we have in view; and even this is certain to fail unless it be carefully effected. The seat of mischief is chiefly in the upper lobe and the apex of that lobe. Now, if we take an ordinary inspiration, we find that the expansion of the chest is disproportionately greater in the lower than in the upper half of the chest; and when the respiration is unusually feeble, this disproportion is so much the greater that scarcely any breath-motion may be detected under the clavicles. But, on deep inspiration, the first sensation of fullness is at the base of the lungs, and that sensation gradually rises as the depth of the effort increases, until, at the very end of the deepest inspiration, the sensation is felt at the apex. This may be readily proved by any one who will take the trouble to try it carefully upon himself. Now, in this very fact lies the difficulty of the matter. It is almost impossible to persuade a phthisical patient to take an inspiration of the depth referred to; for his habitual shallowness of effort induces him to consider *that* a deep inspiration in which the lung is by no means fully distended. It is my habit to show the mode and the required depth by my own inspiration, and to inform them that it is only the *very end* of the deep inspiration which is of service to them. Our aim should therefore be to have the deepest inspiration performed as often as we think right, with a view of thus preventing the process of closure, which is, in my belief, the mode of action of the disease. If there were not a serious objection to the introduction of any instrument as a part of medical treatment, I should advise the employment of a spirometer, which would measure the amount of air inspired; and this, whilst engaging the patient's attention, would enable him to regulate his voluntary efforts, and to ascertain the result. I have several in use; and, after a repeated employment of them in determining the amount of vital capacity at various periods, the patients have expressed much gratification in the assurance that they felt much better from this forcible attempt to inspire deeply.

"I fear that this may be thought too mechanical a plan of treatment; but I beg to observe, that the very existence of the air-cells themselves is in part due to the mechanical introduction of air within them. There are no developed air-cells in uterine existence; and even during the first early period of extra-uterine life they are so slightly developed as to be said not to exist at all. When the air is first admitted into the bronchi, there are no true cells such as may be found in later life; and the period of their development is that of breathing, and their maturity is due to the continuance of the effort. Thus the development of the air-cells may be said to be due to the mechanical agency of inspiration. Moreover, we know how greatly the depth of inspiration is due to volition, to the thousand necessary occurrences of daily life, and to the effect of other diseases; and we admit at once that the effort of inspiration varies under these several conditions. Hence it is not unphysiological to direct an effort to make the act of inspiration perfect (as we daily do to render the digestion of food perfect), and to keep in a due state of distension, or to increase the existing degree of distension, of the air-cells of the lung.

"I do not know if any difficulty would present itself to any mind in reference to the limitation of the lessened action, or of collapse to isolated small portions of the lungs, as is believed to exist on this theory. Perhaps it is more easy to understand how the whole organ may be influenced, rather than a part of it; but, in addition to the special disposition which must exist in the upper lobe, and especially of the apex, from the direction and depth of the air-current in inspiration, I may refer to the fact that the atelectasis of the newly born is always partial, and may be even

limited to one or to several isolated and separated lobules. Hence it may be said to act only on individual cells, and is a fair illustration of that which is believed to exist in the earliest stage of phthisis. The one is not more difficult of belief than the other.

"To show that voluntary inspiration not only may, but has been defended on physiological grounds, I would refer to a remark made by Lehmann, vol. iii, p. 382. In reference to excretion of carbonic acid largely, he says: 'We may perhaps aid a tuberculous patient quite as much by recommending him to respire warm moist air, as if we prescribed lichen or cod-liver oil. Instead of tormenting an emphysematous patient suffering from congestion, and of hemorrhoidal tendencies, with aperients and saline mineral waters, we might relieve him far more effectually by recommending him to practise artificial augmentation or expansion of the chest in respiration (filling the lungs several times in the course of an hour), or to take exercise suited to produce this result; while we should forbid the use of spirituous drinks, and not prescribe tinctures, which might hinder the necessary excretion of carbonic acid.'

"In advising this course, I do not for a moment refer to any increased chemical influence which the increased volume of air may or may not have upon the blood, neither do I make use of the theory that, by this means, we effect pressure upon tubercle, and promote its absorption; I only claim for it, that it will tend to prevent the decay and the closure of the cells from inaction, and thus prevent the further deposition of tubercle in cells which are not already rendered useless by or with it. But it is fair to infer that there must be by this means a more complete renewal of the residual air, and thereby a further benefit be obtained. It may, however, be proper for me to refer to the experiments of Vierordt in reference to the influence of voluntary respiration in promoting the evolution of carbonic acid. He ascertained that the more frequent the respiration, the less percentage of carbonic acid was evolved; but, as the total quantity of air taken into the lungs was increased by an increased number of inspirations of a uniform depth, the total quantity of carbonic acid evolved in a given time was greater than with fewer inspirations. Thus—

"With 12 inspirations per minute $13\frac{1}{2}$ cubic inches were evolved.

" 24	"	" 24.2	"	"
" 48	"	" 42.5	"	"

And, in reference to variation of depth, the frequency being constant, he proved that, with an inspiration twice as deep, the quantity of gas evolved was the same as when the inspirations were three times as frequent, the depth then being constant. Thus the objection which is so commonly raised to voluntary attempts to respire, viz., that it does not increase the vital force, is incorrect; for, in practice, we are not concerned with the percentage evolution of carbonic acid, but with the total evolution in a given period.

"The reason for the large increase in the amount evolved by an inspiration simply twice as deep as an ordinary one, is, that the air in the air-cells is richer in carbonic acid than that in the minute bronchial tubes, in the proportion of 5 to 3; and hence, as a deeper inspiration causes more movement in and exchange of the residual air, the air-cells must lose a larger quantity of the products of respiration. Hence the remedial influence of deep voluntary inspiration is both mechanical and chemical.

"The effort now recommended may weary the patient; and hence I have thought it enough if the patient thus deeply, slowly, and gently respire for five minutes at a time, and on three or four occasions in the day, at the same time explaining the object, and recommending him to avoid shallow breathing in his ordinary respiration. Thus fatigue is avoided, and yet probably the effect is obtained.

"It is, however, essential to the success of this plan that it should be fairly carried out: and if, from other causes, no success results, I do not know of any mischief which could possibly arise from this. Success will of course be dependent upon many causes, and hence neither this nor any other single plan of treatment can be exclusively relied upon. It has, however, this merit, that it is of almost universal application, has evidently a tendency to improve the health, and cannot do harm. When there is no tubercle deposited, I am of opinion that the plan, if

fairly carried out, can hardly be inefficacious; but, in the last stage of phthisis, the possibility of arresting the disease by any means is very small."

ART. 46.—On the diagnostic value of the symptoms indicative of Pulmonary Cavities. By Dr. N. FRIEDREICH.

(*Verhandl. der Phys. Med. G. in Würzburg*, Seib. Bd., 1856; and *Med.-Chir. Rev.*, April, 1857.)

The cracked-pot sound, the tympanitic percussion sound, the amphoric and metallic respiratory sounds, are in this paper examined in relation to the diagnosis of pulmonary cavities. We recently drew attention to Professor Bennett's observations on the occurrence of the cracked-pot sound in various conditions unconnected with cavities. Dr. Cockle has also shown that it may occur in cases of simple bronchitis. Dr. Friedreich gives three cases of pleurisy in which this sound was met with. In the first (a man, aged twenty-two), it occurred in the left infra-clavicular region, at the time when the effusion on the same side was receding, and it lasted until its complete absorption. In the second (a man, aged twenty-two), the sound occurred from the commencement of the affection, and whether the nose and mouth were open or closed, in the left infra-clavicular space, as far as the third rib, to which the pleuritic effusion reached. It disappeared before any change in the exudation was perceived. In the third case (a man, aged twenty-three), the *bruit de pot-fêlé* was produced, the mouth and nose being open, at the upper left side, down to the third rib, at which point the effusion commenced. The patient was still under observation when the paper was written. With regard to the occurrence of the sound in healthy subjects, Dr. Friedreich has failed to discover it in the adult, but on examining forty-six children under fourteen years of age, he met with it twenty-six times—fourteen times audible on both sides anteriorly, but only in five equally loud—in the other cases, generally louder on the left than the right side, and only twice louder on the right than the left. In explaining the production of the cracked-pot sound, Dr. Friedreich opposes the theory that it is due to air being forcibly expelled through the glottis, because, on applying the stethoscope to the larynx, while another person produces the sound, no indication of its formation at the glottis is obtained. In bronchitis and early infancy, he believes the production of the sound to be due to the compression of the smaller bronchi during the act of percussion. He adopts Skoda's theory of its production in phthisis, while in pleurisy he attributes it to compression of the pulmonary tissue by the exudation, and the forcible expulsion through the smaller bronchi of the air contained in them, when percussion is employed.

ART. 47.—A case of Peri-tracheal Deposit with secondary disease of the Lungs. By Dr. BRINTON, Physician to the Royal Free Hospital.

(*Lancet*, Feb. 28, 1857.)

The following case possesses considerable interest, both from its bearing upon the symptomatology of the respiratory organs, and from its connection with those phenomena of the sympathetic system of nerves respecting which both pathology and physiology have at present much to learn.

CASE.—S. W., an unmarried woman, æt. 22, had suffered, during about three months, from slight cough, attended with little or no expectoration, but with some emaciation, and with amenorrhœa. Her family was free from phthisical taint. Her habits were temperate; her occupation that of a laundress; her circumstances latterly so straitened as to reduce her food below its customary standard of quantity and quality.

About a month before her admission into the Royal Free Hospital, she was suddenly seized with the severe symptoms from which she dated the present illness. Her cough became violent, and was accompanied with pain in the region of the upper half of the sternum, as well as with expectoration. She lost all appetite; her strength was prostrated; and gradually becoming worse, she applied and was admitted an in-patient on the 25th of January.

At this time her aspect was that of a person suffering from some acute pulmonary disease. Her face, pale and somewhat emaciated, had a haggard, anxious

look, and her nostrils worked almost convulsively with each inspiration. Her lips were of a blue tinge, suggestive of partial asphyxia. Her skin, though hot and dry over the trunk, was colder than natural at the extremities. Her pulse was about 120 per minute; her breathing about 36; and both inspiration and expiration (but especially the latter act) gave rise to a mucous rattle, audible at some distance from her bed, and precisely like what is vulgarly known as "the deadrattle" that immediately precedes the final agony. The voice was feeble but distinct. Her cough was frequent, and somewhat paroxysmal in character; but though loose enough to suggest an easy expectoration, this expulsive act was rarely effectual, being repeated several times before it hawked up a dull-yellow, opaque, puriform, and somewhat nummular sputum.

On examining the chest, there seemed no deficiency of movement on either side, although a forced inspiration decidedly bulged the left side a trifle more than the right. The vocal thrill was equal on both sides. The vocal resonance was somewhat more distinct on the right, especially in the subclavian region, where there was slight dulness to percussion, and where the inspiration was rather louder, harsher, and more tubular than elsewhere, and the prolonged expiratory murmur somewhat similarly affected.

It was not, however, without some difficulty that these sounds could be verified. All of them were veiled and nearly lost in the mucous rattle before mentioned, which was heard over the whole chest as a large loud sound of low tone, with irregular remissions of intensity, but scarcely any real interruptions or intermissions. It was loudest during expiration. It never approached to a liquid or bubbling sound. It was utterly unlike the harsh snoring sound sometimes produced by aneurismal interference with the larynx. Its distinctness increased as it was traced towards the manubrium.

Besides this sound, a little mucous crepitation occupied the more depending parts of both lungs—namely, the lower lobes posteriorly.

The heart, rather large and weak, appeared to be otherwise quite healthy, as did also the larger vessels. The integuments, including those of the face, were flabby and almost puffy, but there was no anasarca. The urine was scanty and high colored, but devoid of albumen. The bowels rather constipated.

There could be little doubt that the patient was almost moribund on her admission, and past all hope of that reaction which the comforts and the treatment of an hospital sometimes bring about—even in cases where, as in this instance, the desperate state present seems due to neglect or privation almost as much as to disease.

The body, examined about sixteen hours after death, was but imperfectly rigid. On careful dissection, it exhibited the following appearances:

The heart was relaxed and flabby; its left ventricle uncontracted; its right ventricle distended with a tolerably large quantity of dark blood. Its valves were healthy, as were also the large vessels arising from it.

The right lung had not collapsed over about one-third of its anterior surface, including its middle and most of its upper lobe. All this portion of it had a pale-red or flesh-colored hue defined by an abrupt, wavy margin from the neighboring collapsed and healthy-looking pulmonary tissue. A similar appearance, of less distinctness, engaged a very small portion of the anterior surface of the left lung, near its root.

The larynx, trachea, œsophagus, and lungs were next removed in a mass, and subjected to further examination. The diseased portions of lung were nowhere absolutely devoid of crepitation when compressed. But in the amount of this crepitation they contrasted with the somewhat dark and engorged healthy lung in their neighborhood just as remarkably as they did in respect of color. Indeed, all the portions in which this color and consistence were best marked had a specific gravity enabling them to sink readily in spring-water. Their section allowed the expression of a whitish, albuminous-looking juice from the pulmonary lobules, and of a purulent fluid from the cut orifices of the smaller bronchi. The characters of this pus were identical with those of the matter expectorated during life.

On dissecting carefully around the bifurcation of the trachea, it was found that the anterior aspect of the fork of this tube was occupied by a dense, dull, yellowish-white mass, about half an inch in thickness, of extremely tough and fibrous con-

sistence, and about one inch deep in the vertical direction. The right side of this mass extended along the root of the lung in front of the right bronchus, where it became fused into the fibrous capsule of a calcified bronchial gland, that seemed to bound it in this direction. To the left side it spread, as a layer of rapidly-decreasing thickness, for a short distance over the root of the left lung. Upwards it reached, on the right side, a little way along the trachea, and was loosely connected with an oblong bronchial gland (also calcified in its centre) here: towards the left side, it crossed obliquely over the trachea, to become moulded, with a great and sudden increase in its thickness (here three quarters of an inch), upon the left third of the tracheal circumference, for about an inch and a half, just avoiding the œsophagus and its attachment to the respiratory tube. The areolar tissue attaching the aorta and great vessels to this mass was almost everywhere reduced to a scanty (and therefore rather tense) network; but it was nowhere so deficient as to bring the mass into immediate contact with them, far less to imply any fusion with their coats. But at the left side and lower part of the trachea, the mass was completely agglutinated to this tube, resting upon it by a firm immovable union, which evidently depended on the complete involvement in the disease of the normal areolar tissue; so that a section showed the cartilages of the trachea immediately bounded by the new substance. Just at this line of junction the mass was in one place softened, and apparently detached from the subjacent cartilage. The exact degree in which the calibre of the trachea had been diminished by the pressure of this adventitious deposit, it was difficult to determine after laying open the tube. But there could be no doubt that a considerable effect of this kind had obtained during life. Indeed, even after removing the lungs from the body, and thus relieving the parts of that surplus pressure which the pulmonary deposit must probably have brought about, the influence of the mass on the trachea was well shown by its separating the adjacent rings of the adherent trachea to a distance from each other amounting to at least twice or thrice that elsewhere intervening between the neighboring cartilages. This local elongation of the trachea must obviously have sufficed to effect a considerable diminution of its calibre, such as would impart a much greater efficacy to the further pressure or flattening of the tube by the deposit which occupied its circumference. The inferior laryngeal nerve of the left side was stretched and flattened over the deposit, and was also thickened and redder than natural in the same place. But it was not further involved in the disease.

On examining thin sections of this mass under the microscope, with the aid of various reagents, it could be seen that it consisted of an adventitious deposit, for which the original areolar tissue constituted a kind of stroma. The new mass was, in fact, imbedded in the old areolar network, the white and (especially) the yellow elements of which were visible in the form of tightly stretched meshes, the interstices of which were so distended with the adventitious substance that they could only exhibit their ordinary curling and hooked appearance at the extreme edges of any given section. The vessels which could also be seen, were here and there connected with (and apparently occupied by) large compound cells, closely resembling those of the spleen, and, like them, containing what appeared to be blood-corpuscles in various stages of disintegration. The new substance itself consisted chiefly of delicate and indistinct fibres, analogous to the ordinary fibrous development of plastic lymph; with this fibrous mass, however, were mingled so many granular and indistinctly nuclear particles, as to give the whole a somewhat larger amorphous constituent than is usually found in new fibrous tissue. Near the softened part, this amorphous element was more abundant, so much so as almost to suggest its approximation to the characters of tubercle.

The pulmonary disease—which though nowhere traceable by direct continuity into the tracheal, approached very near it, and, on the right side, increased in intensity almost directly with this propinquity—offered some analogies with the tracheal. The lung was infiltrated with a large quantity of albuminous fluid, in which were floating pus-cells and “mucus corpuscles,” together with innumerable epithelial cells. The latter were evidently the ordinary epithelia of the pulmonary lobules, abnormal in nothing save in their quantity, and in the polyhedral forms which close packing had forced them to assume. The lobules were indeed many of them almost stuffed with these epithelial particles, which, adherent to the lobular membrane, had either been washed out or broken down in the centre of the lobular

cavity. The capillaries of the diseased lung were singularly empty of blood-corpuscles; while they were almost everywhere bulged, at short intervals of their length, by large ($\frac{1}{100}$ in. diam.) cells containing refractile granules, like the more sparing and less uniform bodies of the same kind found in the tracheal deposit. In some instances the membrane enclosing these granules appeared to be deficient over part of their exterior: rarely it was absent all around them, so that they were merely granules aggregated into a spherical mass, not enclosed within a cell-wall. They seemed to be nowhere free in the lobules, except under circumstances which referred to this extra-vascular site to accidental violence. No destruction or lesion of lobular tissue could be detected.

ART. 48.—*On the determining causes of Vesicular Emphysema of the Lungs.*

By DR. JENNER, Physician to University College Hospital, &c.

(*Medical Times and Gazette*, Jan. 24, 1857.)

After referring to the importance of ascertaining the determining cause of pulmonary vesicular emphysema as a guide for its prevention, and to the predisposing influence of all changes in the structure of the lung which impair its contractility, the author adverted to the fact, that the only force capable of unduly dilating the air-cells called into play during respiration is the pressure of air on their inner surface. He then briefly recapitulated the inspiratory theory at present generally received, and quoted the following passage from the latest exponent and most powerful advocate of that theory:—"The act of expiration tends entirely towards emptying the air-vesicles, by the uniform pressure of the external parietes of the thorax upon the whole pulmonary surface; and even where the air-vesicles are maintained at their maximum or normal state of fulness by a closed glottis, any further distension of them is as much out of the question as would be the further distension of a bladder blown up and tied at the neck by hydrostatic or equalized pressure applied to its entire external surface." The object of his paper, Dr. Jenner states, is to show, in opposition to these views, that the force called into play by powerful expiratory effort is by far the most common and efficient cause of vesicular emphysema of the lung. Powerful expiration is, Dr. Jenner affirms, infinitely the most frequent determining cause of acute vesicular emphysema, and of the chronic vesicular emphysema, which accompanies chronic bronchitis. It is probably the constant determining cause of the vesicular emphysema which supervenes on chronic congestion of the lungs and bronchial tubes, and on diseased heart, and of the atrophous emphysema of the aged, and the invariable determining cause of vesicular emphysema whenever it is general, or occupies chiefly or only the apex and border of the lung, and whenever the dilatation of one or more vesicles is extreme. Dr. Jenner denies that during expiration every part of the lung is equally supported and equally compressed, and he affirms that the apex, the anterior margin, and the margin of the base, and some parts of the root of the lung, are at once imperfectly supported, and comparatively or absolutely little compressed only during expiration. The thoracic parietes covering those parts of the lung which are the least supported and compressed, are those which are seen when a person makes a powerful expiratory effort with a closed or imperfectly open glottis, as in whooping-cough, croup, and hypertrophous emphysema, to be driven outwards. These same parts are the most common seats of emphysema. Three cases are detailed by Dr. Jenner in illustration of his position. In proof of the force exerted on the air-cells of the lungs when powerful expiratory efforts are made with a closed glottis, mention is made of the well-known fact, that during the expulsive efforts of labor one or more cells occasionally give way. In a postscript, the author mentions that he had examined several horses for the purpose of ascertaining whether the parts of their lungs affected with vesicular emphysema were situated in those parts of the thorax the least supported and compressed during expiration, and that in all he found such to be the case.

ART. 49.—*The danger of Artificial Respiration except in the prone position.*

By DR. MARSHALL HALL, F.R.S.

(*Lancet*, Feb. 7, 1857.)

In this paper Dr. Hall's object is to show that artificial respiration can only be performed with safety when the patient is in the prone position.

"If," he says, "the asphyxiated patient be moved and placed in the supine position, in which no attempts at artificial respiration can be effectually made, what is the condition of the rima glottidis, or entrance into the windpipe? Is it *free*, so that air may be pressed or drawn into it? And if apparently free, does it remain so at the moment when an effort to force or draw air into it is made?"

"1. Is the tongue so securely situated, all muscular energy having ceased, as neither to *fall* backwards, nor to be *drawn* backwards, and so close or obstruct the orifice and entrance into the windpipe?"

"2. Is there no accumulation of mucus, or other animal fluids, or of fluids from regurgitation from the stomach, which may also obstruct the glottis? nay, more, which may be forced or drawn into the windpipe, inducing a *second* and fatal suffocation?"

"No one can say, *a priori*, that one, or even both, of these events may not occur. These are not only possible, but probable,—not *only* probable, but inevitable under certain circumstances.

"There is one fact of the utmost importance. When, from any circumstances, the nervous and muscular powers are in abeyance, nothing is so common as regurgitation from the stomach, from change of position, compression, &c. Under such circumstances, compression of the sides of the thorax would certainly be apt to produce this effect. Now, in the supine position, the matters so regurgitated would remain in the fauces, obstruct the glottis, or, when the pressure was removed, be drawn into the windpipe. Leroy's mode of attempting to effect artificial respiration, of which a sketch is given by the Royal Humane Society in its Reports, is utterly ineffectual; but if effectual, would be replete with danger. The only certain safeguard against such a fatal accident is—the *prone position*. In this position, the tongue tends to fall forwards, and all fluids flow from the fauces and the mouth, or are expelled by the first induced expiration.

"All this is reasonable, *a priori*. But we must not rest here. Our appeal must be to *facts*, not to mere notions. The facts must be ascertained by careful examination of the dead subject.

"1. What is the position of the *tongue* when the body has been roughly moved about and laid in the supine position, all cadaveric rigidity of the parts being overcome by previous movement of this organ backwards and forwards?"

"2. What is the further position of the tongue in the supine position, at the moment of attempted inspiration, first, by means of the bellows, or secondly, by the removal of the pressure on the ribs or sternum, and the consequent dilatation of the thorax?"

"These facts may be ascertained by removing the tissues on one side of the neck, so as to give a lateral view of the tongue, glottis, epiglottis, and pharynx, and by replacing them by a portion of transparent glass of the proper size and form, properly placed and carefully maintained in its position.

"The first part of this examination has been already made: The subject being placed in the supine position, and the lateral parts of the neck being removed, so as to admit of observing the relative position of the internal organs—the tongue, the epiglottis, the glottis, the pharynx—it was seen that obstruction to the entrance of air actually *did* take place.

"I now propose to place a piece of transparent glass so as accurately to close the cavity, and allow of the observation, first, of the effect of *position*, the supine and the prone comparatively, and then of any attempt to induce *inspiration*.

"A similar examination of this internal in reference to fluids present in it (and we never can know when such fluids are present) is unnecessary; fluids will gravitate to the lowest parts of a cavity, and will be drawn into an open orifice, such as the glottis, under the influence of air forced or inhaled into it. And such an event not only renders all attempts at *inspiration* nugatory, but induces a permanent because material obstruction of the entrance in the windpipe.

"In confirmation of these views I again appeal to experimental *facts* :

"The following experiment has been repeated *many times*, and has been witnessed by George Webster, Jun., Esq., of Dulwich; Mr. Williams, superintendent of the Royal Humane Society, Hyde Park; and other gentlemen :

"The dead subject being placed in the *supine* position, and pressure made on

the sternum and ribs, a little gurgling was heard in the throat; but, the pressure being removed, there was *no* evidence of *inspiration*.'

"Now let us contrast with these abortive attempts to induce artificial *inspiration* in the *supine* position, the beautiful and life-giving results—*inspiration* and *expiration*—of alternative rotation from the *PRONE* position and reposition. I continue the quotation:

"The subject being then turned into the *PRONE* position, and pressure being made on the spine and the ribs, and removed as before, there were free *expiration* and *inspiration*.

"Far more marked is the effect of pronation and rotation:

"The subject was turned into the prone position: considerable *expiration* took place, which was much augmented by pressure of the hands on the back. On removing this pressure a little *inspiration* took place. The body being then rotated on the right side, considerable *inspiration* again took place, whilst moving through one-fourth of a circle; on continuing the rotation, *inspiration* continued until the shoulder was half-way between the lateral position and the table, when it ceased.'

Then, after observing that this principle of *prone respiration* is of such importance as to demand a new designation—that proposed being *Prenopnœa*—Dr. Hall concludes by saying:

"I conclude the momentous subject by several *aphorisms* in regard to the treatment of asphyxia:

"1. The effects of suspended respiration can only be removed by the renewal of respiration.

"2. Artificial respiration can only be certainly, effectually, and safely performed in the *PRONE* position; for,

"3. In the *supine* position the larynx is apt to be obstructed by the falling back of the tongue and epiglottis, or by the accumulation of fluids already in the mouth or regurgitated from the stomach.

"4. These fluids may be *fatally* inhaled into the windpipe when *inspiration* is mechanically effected.

"All other measures are subsidiary, even the rubbing the limbs with pressure upwards; and all which exclude respiration are, *ipso facto*, destructive; the *warm bath* is of *doubly fatal* tendency,—first, by excluding pronation and rotation, and secondly, by promoting the formation and the circulation of the blood-poison—carbonic acid."

ART. 50.—*The fatal tendency of the Warm Bath in Asphyxia.*

By Dr. MARSHALL HALL, F.R.S.

(*Lancet*, Dec. 20, 1856.)

"Warmth is so obviously a stimulus, and a stimulus is so apparently required for a patient taken out of the cold water in a state of asphyxia, that in recommending the warm bath we seem to be addressing ourselves to the common sense of mankind, and it was a step in advance to entertain a *doubt* on the subject.

"But when we begin to experiment—when we learn that an animal deprived of respiration by being submerged under water, *lives longer* in cool water than in warm water, we learn to consider whether, in fact, coolness is not more favorable to life in the asphyxiated from submersion, than warmth. We recall to mind, too, that animals bear the abstraction of respiration in proportion to their coolness: the hibernant animals and the batrachian tribes will scarcely drown at all. If a kitten be first cooled, or if it be immersed in cool water, it will not drown so soon as it would do if submerged at its ordinary temperature in water of the same temperature—facts established by Edwards, by M. Brown-Sequard, and myself, and witnessed by the Secretary of the Royal Humane Society, and by its superintendent, in Hyde Park.

"Thus experiment is made to correct preconceived ideas, however apparently consonant with common sense.

"There are other facts which point to other modes of treatment of the drowned, which the administration of the warm bath necessarily excludes. If a poor creature be perishing for want of food, we cautiously administer food. If a man be, in

like manner, perishing for want of air, should we not administer air? Is this not simple and reasonable? And in the case of drowning, is not the want of air the first condition to which we should bring succor, and the want of temperature the second or third? And should we not first administer to the first want? Then in the case of drowning, we should administer air first and warmth in the second place. But may not the warmth administered without air do great and absolute injury? It raises the temperature, and in so doing augments the necessity of respiration to life.

"In the *first* place, if *any* effect be produced by the warm bath, the circulation is accelerated. But to accelerate the circulation without inducing, at the same time, efficient respiration, is to augment the formation of carbonic acid—the *blood-poison*—without its elimination from the system, and it induces, consequently, a fatal result:

"*Secondly*, all *excited* respiration through the medium of the cutaneous excitator nerves is excluded, the uniform temperature of the warm bath excluding the excitants of those nerves arising from the *alternate* application of *heat* and *cold* to the surface;

"*And thirdly*, *imitated* respiration is excluded by the very sustained position of the patient, excluding, as it does, alternate pronation and rotation, and pressure applied and removed, or changes of position and compression, which induce respiratory movements.

"So that the warm bath is not only positively injurious by *poisoning*, but negatively, by excluding the de-poisoning process.

"*Lastly*, the warm bath excludes those frictions of the limbs upwards, with pressure, which really constitute the most effectual means of promoting the circulation and warmth.

"Nor is it unimportant to save the *time* expended in preparing the warm bath, or in carrying the patient to it.

"And it is scarcely a minor point to direct *all our thoughts and energies*, undiverted, to the important remedies exclusively.

"In conclusion, the warm bath is of *doubly fatal tendency*: it is so in itself positively; and it is so negatively, by excluding every real remedy."

(E) CONCERNING THE CIRCULATORY SYSTEM.

ART. 51.—*The relation of Cataract to Heart-disease.* By T. FURNEUX JORDAN, Demonstrator of Anatomy in Queen's College, Birmingham.

(*Medico-Chir. Review*, April, 1857.)

The object of this paper is to relate nineteen cases in support of the proposition that non-traumatic cataract is frequently associated with, and in many instances may fairly be regarded as, a result of cardiac impairment. The nature, extent, and locality of such cardiac lesion will be more fully referred to after a statement of the cases which have led to its inference has been placed before the reader. The cases are not selected, but are all that came before the author from one certain date to another. It is presumed that they furnish data for all the conclusions which it is the object of this paper to set forth. They are about twenty in number, and constitute but a third of the cases of cataract in which the author has ascertained the thoracic conditions; and in no one of the whole number of cases could a perfectly healthy condition of the heart be confidently affirmed to exist. The cases are given at some length, in order that the conclusions drawn might receive confirmatory evidence from the general symptoms, and the general and clinical history of each individual case.

"After a fair consideration of these cases," Mr. Jordan proceeds to say, "there can be no impropriety in making the affirmation with which they were introduced—that heart-disease is, in numerous instances, found in conjunction with non-traumatic cataract, and that consideration of the history of the cases where it is found warrants us to look at it in the light of a cause. It cannot be presumed that the heart-disease is a product of the same cause which induced the cataract, because then some other and prior cause of both would need to be eliminated. Such cause it would be difficult to demonstrate. No cause of cataract is known, unless heart-

disease be admitted to act as such. That admission being made, the causes of heart-disease are numerous and undoubted.

"The questions which now most naturally arise are these:—What extent of heart-disease shall favor the development of a cataractous opacity? Is there any particular lesion of the heart which, more than another, predisposes to the affection in question? The cardiac disease exists only in a slight degree—a degree, however, unmistakably appreciable, whether we consider general symptoms or physical signs. The cardiac impairment is indeed so limited that old age in cataractous patients is a familiar phenomenon to the ophthalmic surgeon. Nor does the true explanation of this circumstance rest on the inference that old age is itself a cause of cataract. A large number of cataractous patients are not old. In one-third of the above cases, the age is between forty and fifty, while two of the cases are under twenty years.

"It being presumed that cataract is a gradual degenerative change in the crystalline lens from a partially impaired heart, it is natural to infer that the causes of so limited lesions would accumulate in old people—in other words, that younger people would be cut off by more extensive lesions, either of the heart or other organs.

"Sudden death is not unknown in cataract—occasionally as the mortifying result of an operation; but so exceptional is it, that where so extensively a diseased heart is found as to render either death probable or life uncomfortable, cataract is one of the results least to be expected. Hence one common cause of cardiac mischief—Bright's disease—is unknown in cataractous cases, clearly because Bright's disease leads to other and graver results. Rheumatism, which may leave only slight impairment of the central organ of circulation, we have already seen to be a frequent incident in the history of cataractous cases—possibly in the same category with rheumatism, future research may include influenza, scarlatina, small-pox, and the various fevers.

"In reply to the second question—'Whether any particular lesion of the heart more than another predisposes to the affection under consideration?' a negative would seem the more correct reply. Cataract obeys the general law which regulates for the most part all the secondary results of heart-disease—namely, that the result is determined rather by the amount than by the precise locality or nature of the abnormal condition. Of course the infinite rarity of disease of the right side of the heart is understood. In the above cases, slight mitral regurgitation is the cardiac infirmity found in the greater number of cases. In some of the cases, the mitral and aortic orifices were both partially implicated; in one or two, the aortic only. In several of the cases, a fatty condition of the heart might be reasonably predicated. It will be seen that an extended præcordial dulness, without a proportionate increase of the heart's impulse, was a not unfrequent phenomenon. Hereditary heart-disease was found in more than half the cases where the hereditary tendency could be discovered. In case No. 19, there had been a chest-injury, evidently implicating the heart.

"It is an undoubted disadvantage that the foregoing conclusions have not, from entire absence of opportunity, received the confirmation of post-mortem dissection. But such additional proof, while desirable, is not absolutely essential. A morbid sound is assuredly an appreciable phenomenon, and cannot exist without a cause.

"Let us turn now for a moment to the collateral evidence confirmatory of the inferences above drawn. It has already been stated that the results of considerable cardiac lesion are not present, and cannot be expected to be present, in cataractous cases. The less grave symptoms, however, are frequently obvious, as vertigo, tendency to faintness, dyspnoea, palpitation. Those, too, who have mixed much with cataractous patients, must have observed frequently the peculiarity of their mental states—states not rarely found associated with heart-disease. Extreme loquacity on the one hand, and obstinate taciturnity on the other, are psychological indices by no means rare. Nor are these results mere accidental sequences of blindness—they are not found in the blindness occasioned by injuries.

"Probably much light may yet be thrown on the pathology of cataract by future microscopic examination of the opaque lens. In one opportunity I have had of examining a non-traumatic cataractous lens, the microscope revealed fat-globules in the nuclei of the delicate cells covering the surface of the crystalline lens, and

here and there a few delicate plates of cholesterine might be detected. May not cataract be the result of a process identical with or analogous to that of fatty degeneration? That fatty degeneration of a portion of the lens may exist, is proved by the researches of Drs. Von Ammon and Schön as quoted by Dr. Mackenzie. The former found, in cases of *arcus senilis*, a fatty arcus on the corresponding margin of the lens. Dr. Schön has found both the lens and posterior capsule affected with fatty degeneration.

"Authors, when speaking of the causes of cataract, have been universally cautious. One only that they have advanced needs any consideration, which is, the influence of occupation in those who are exposed to the glare and heat of furnaces. A sufficient refutation of this opinion is found in the statements of the most reputed authors themselves. Mr. Middlemore, whose extensive ophthalmic practice lies in Birmingham—the very hotbed of furnaces—says, speaking of such occupations, 'They are much more likely to produce glaucoma or amaurosis, a varicose enlargement of the vessels of the eye generally, or some form of chronic inflammation of the deep-seated textures.' Dr. Mackenzie, too, throws equal doubt on the same class of causes. If, indeed, cataract could be demonstrated to be more frequent in those whose occupations are in the vicinity of furnaces, would not the rational explanation of so increased frequency, be, that the arduous occupation, the lifting heavy weights, and the extreme heat, would affect the circulation and its central organ, rather than the well-protected crystalline lens?"

ART. 52.—*Can an open Foramen Ovale produce a bruit?* By Dr. MARKHAM,
Assistant Physician to St. Mary's Hospital.

(*British Med. Journal*, April 4th, 1857.)

This case appears to illustrate a new fact in relation to the origin of cardiac bruits, for it points to a source and mode of origin of such a bruit, as yet neither recognized nor admitted in the history of the physical diagnosis of the abnormal sounds of the heart. Contrary to what is held on this subject, it appears to show that a bruit may be produced at an open foramen ovale; indeed, there is no other explanation. The case is also interesting as showing that the existence of tubercle may not be detected by most able auscultation.

CASE.—C. S., æt. 4, had always been considered a delicate child. A year ago she was, for some cause, under the care of my friend Dr. Sieveking, but had since then enjoyed good health up to the period of my seeing her. On February 7th, 1857, the child was brought to the hospital by the mother, who informed me that she had been ill about three weeks; that she was falling away, had become thin and pale, had lost her appetite, and was occasionally sick; that she was also fretful and irritable, and had an occasional slight cough. On examining the chest, I found a rough, loud, systolic bruit, which was audible all along the base of the heart, and in the whole of the left subclavicular region; it was indistinctly heard below the nipple, and was scarcely audible at the heart's apex; its point of greatest intensity was to the left of the upper part of the sternum; it was not audible up to the right edge of the sternum, along the course of the aorta. I found nothing abnormal in the sounds of the lungs, excepting only that I believed the subclavicular region of the left side was slightly duller, on percussion, than that of the right side. Taking into consideration the general condition of the child, the peculiar situation of the bruit, the absence of all symptoms of cardiac disease, and the possible presence of a left clavicular dull percussion sound, I formed the diagnosis that the child was suffering from tubercular disease of the lungs; though, at the same time, on account of the absence of other signs and symptoms of pulmonary disease, I placed a query by the side of the diagnosis entered on the paper.

During the following ten days, under the use of cod-liver oil and steel, the child appeared to improve in health. On the 18th, however, about twelve days after I had first seen her, she was brought to me, greatly altered in appearance. The mother informed me that, on the preceding evening, the child, who up to this moment seemed still improving, had been suddenly seized with violent convulsions and great difficulty of breathing, and that she had been struggling and fighting for life the whole of the night, the mother expecting that every moment would have been her last.

It was evident now that some serious mischief had fallen on the brain. Instead of being, as hitherto, restless and irritable, and hard to manage, she lay in her mother's arms, sleepy and drowsy, stupid, difficult to rouse, and partially senseless. There were also convulsive twitchings and jumpings of the right shoulder, but no paralysis. The face was flushed, the pulse rapid, and the skin hot and dry. There was no cough, nor was the respiration particularly affected; she breathed freely, in fact. On examining the chest, I found the heart's action violent; the bruit mentioned above was still present, but it was now louder, rougher, and more prolonged; it was distinctly audible over the whole præcordial region; also over the upper part of the sternum, and along its right border. It was also heard remarkably loud in the whole of the upper half of the interscapular space; equally loud on either side of the spine. The lungs were carefully examined, but nothing abnormal could be detected in any portion of them. A note was made at the moment that the respiratory murmur was everywhere loud and clear, and the percussion-sound good. Not the slightest râle was anywhere audible.

I may here observe, that the child was not altogether free from symptoms of cyanosis. It is true they were so little marked that I should not have noticed them, had not the mother called my attention to the circumstance that the child's feet were generally cold, and often of a bluish-red color; and that the small veins immediately around the nails of the hand were swollen and dark colored. The serious condition of the child at the moment entirely distracted my attention from this particular fact.

Taking into calculation the signs and symptoms here recorded, I came to the conclusion that the child was now suffering from cardiac inflammation. I founded this opinion on the violence of the febrile action; the intensity and now wider distribution of the cardiac bruit; and the absence of signs and symptoms of pulmonary disease. The choreic twitchings of the arms, the strong beatings of the heart, and the cerebral symptoms, confirmed the opinion that there was cardiac inflammation, and that the disease had secondarily involved the brain.

The child died about seventeen hours after I had seen her and had made the above examination.

Necropsy of the body revealed the following condition of the heart and lungs. The heart presented, neither externally nor internally, the slightest trace of inflammation; nor was there, as far as the eye could judge, any deviation from their normal condition observable in any of the valves or of the orifices of the organ. There was neither constriction of the orifices nor of the roots of the great vessels, nor any defect in the valvular apparatus; in all respects the heart appeared healthy and normal, excepting one, and this was in an open condition of the foramen ovale. The foramen ovale, though largely open, so as to permit the point of the finger to pass from the right into the left auricle, was partially closed, on the left side of the septum, by a peculiar adjustment of the membranous valve. This membrane, about one-third of an inch wide, was attached at the upper and lower parts of the opening, but at its intermediate parts was free and unattached; in consequence of which, it would permit a stream of fluid to pass readily from the right into the left auricle; but, should the current tend to pass in an opposite direction—from the left to the right auricle—then the membrane, falling back on the opening and acting as a valve, would prevent the flow of the fluid, excepting through two narrow semilunar slits which still remained unclosed, one on either side of the membranous valve.

The lungs were dark-colored, and did not contract much when the thorax was opened. On incising them, I found that there was not a single portion of any lobe of either lung which was not studded with miliary tubercles. These tubercles, about the size of mustard-seeds, were equably distributed through all parts of the lungs, and were evidently deposited at a similar moment, for they all presented exactly similar appearances; they were placed at intervals of about half an inch apart. The lung-tissue intervening was perfectly healthy and crepitant, and readily distensible by inflation. Very little bloody serum escaped from the cut surfaces of the lungs, nor was any observed in the larger bronchial tubes.

ART. 53.—*Two cases of Paracentesis Pericardii.* By (1) M. TROUSSEAU, Physician to the Hôtel Dieu, of Paris; and (2) M. VERNAY, Physician to the Hôtel Dieu, at Lyons.

1. (*Gaz. Hebdom. de Méd. et Chir.*, Nov. 7, 1856.)

2. (*Schmidt's Jahrbucher*, No. 3, 1857.)

1. *M. Trousseau's case.*—A young man, æt. 27, suffering from all the signs and symptoms of capillary catarrh on the one hand, and of endocarditis, with insufficiency of the mitral valve on the other, was admitted into the Hôtel Dieu, on the 2d of June, 1856. After this pericarditis supervened, with extensive effusion. The quantity of the effusion was estimated at no less than a litre. The sounds of the heart were inaudible. The anxiety and prostration were very great.

On the 1st of August a consultation was held, in which all the physicians of the Hôtel Dieu took part, and it was agreed to operate. The operation was performed by M. Trousseau himself on the spot. An incision was made with a bistoury in the centre of the dulness corresponding to the effusion, which was in the intercostal space immediately below the nipple. The skin and muscles were divided successively and with great care until the pleura was reached. The pleura was then divided, and the finger being introduced into the pleural cavity the top was brought into contact with the distended pericardium. The distension was such that the beatings of the heart could not be felt. M. Trousseau then proceeded to open the pericardium by dividing its successive layers upon a director, and when the opening was effected there gushed out about 200 grammes of reddish serosity, which serosity immediately coagulated into a substance very like currant jelly. A considerable quantity of this fluid was lost amongst the bed-clothes. After this the patient was made to lie upon the left side, when about 200 grammes of a yellow liquid escaped from the opening. This liquid was different from that which had escaped previously, and that not only in color but also in the fact that it did not coagulate. In fact, as appeared from the autopsy, this yellow fluid came from the pleura, whereas the red coagulated liquid proceeded from the pericardium. When the fluid had ceased to escape, M. Trousseau attempted to inject some iodine into the pericardium, but in this he failed, a spoonful perhaps escaping into the pleuræ. After the operation the patient experienced considerable relief, and the pulse became more frequent and less distinct. In the evening, however, he was seized with convulsions, principally on the right side, and these convulsions recurred at frequent intervals during the night. He died on the 5th of August, five days after the operation.

On examination after death, the left pleura was found to contain a considerable quantity of yellow fluid, like that which had escaped when the patient was turned on that side during the operation; but no adhesion, or false membranes, or fibrinous flakes. The pericardium was of a reddish color, globe-like in form, and as large as a man's head. There were no adhesions to the surrounding parts, except to a small portion of the edge of the overlying lung, and this was evidently of no recent date. Corresponding to the part where the opening had been made there was, on the interior, a violet spot which broke down under the slightest pressure, and allowed a sound to pass through; on the exterior the course of the opening was marked by some false membranes and by some considerable vascular injections. Contained in the pericardium were about 1000 grammes of the reddish coagulable fluid which had escaped in the first part of the operation, and in the fluid were a few fibrinous flakes, but only a few. The outside of the heart and the inside of the sac containing it were covered with a thick reticulated false membrane of a dirtyish yellow color. The heart itself was slightly enlarged and hypertrophied concentrically, but there was no evident mischief in the valves. Some crude tubercles were scattered through the lungs and in the bronchial glands.

2. *M. Vernay's case.*—François F., æt. 23, a day-laborer, admitted into the Hôtel Dieu, of Lyons, the 23d of July, 1855. He had been affected with a continually-increasing breathlessness, which symptom had come on in the first instance after an accident in which his chest had been much compressed for some time. On admission, he exhibited symptoms of cyanosis, with considerable enlargement of all the superficial veins. The abdomen was distended, dull on percussion, and fluctuating. The chest was considerably bulged out, and that not only anteriorly but

on all sides. Anteriorly on percussion there was marked dulness over the whole of the left side and over the two inner thirds of the right side; posteriorly there was increased resonance on the right side, incomplete resonance on the left side, but no dulness. On auscultation the sounds of the heart were scarcely audible, but no irregularity could be detected in them. No respiratory sound could be heard over the whole extent of the dulness. Posteriorly this sound was exaggerated on the right side, and feeble and slightly rough on the left, as if the lung were compressed there. The dyspnoea intense. The pulse small, accelerated, regular.

On the 25th, an exploratory trocar was introduced between the fifth and sixth ribs on the left side, almost close to the edge of the sternum, and on withdrawing the stylet, about 500 grammes of yellow fluid escaped. This fluid escaped in a feeble *continuous* jet, and the current was scarcely quickened by taking a deep inspiration or by compressing the chest. The result was very satisfactory as far as it went. The dulness continued, but the breathing was greatly relieved. This improvement, however, was only temporary. On the 28th, another puncture was made, and 400 grammes of fluid evacuated. The liquid, however, continued to ooze from the opening until the 31st. In this case, also, the relief was only temporary. On the 12th of August paracentesis abdominis was performed, and a large quantity of fluid removed. This operation relieved the distress of breathing, but only for a time. Death happened on the 16th of August, being preceded by symptoms of purpura hæmorrhagica.

On examination the pericardium was found to be an enormous fibrous pouch occupying nearly the whole of the thoracic cavity. The lungs were pushed back, especially the left. The liquid contained in the pericardium was of a yellow color, containing a few fibrinous flakes, and sufficient in quantity to fill five wine-bottles. The heart had a macerated appearance, and here and there upon its surface were old pseudo-membranous patches. The auriculo-ventricular opening in the right side was contracted by a fibrous ring, and that to such an extent that it was not possible to insert the tip of the little finger. The only other appearance which requires to be noticed, was that the left lung was so much compressed by the distended pericardium as to be almost carnified.

ART. 54.—Cases of Pneumatosis. By Dr. J. A. MARSTON, Staff Assistant-Surgeon.
(*Medical Times and Gazette*, Feb. 7, 1857.)

Both these cases occurred in the Malta Military Hospital, in patients affected with typhoid fever:

CASE 1.—The first case noticed occurred in a private of a line regiment, suffering from typhoid fever, with the characteristic abdominal symptoms. He had been thirteen days in hospital, and was evidently sinking. The surgeon who attended him observed, in the afternoon visit, that the left side of the neck, and greater portion of the thoracic parietes, appeared much swollen, and upon pressure they were found to be distinctly emphysematous. Having been called to a patient a few days previously, the surgeon was able to state positively the absence of this affection then. The man died about five minutes after the first observance of this symptom; and, upon examination, it was discovered that air was mixed with the blood of the venous system generally, existing in the right side of the heart, liver, hepatic and portal systems, renal system, spleen, and the viscera generally. The lungs were most carefully examined, and no trace of rupture could be found anywhere; but they were emphysematous (the lobular variety), about their margins and apices. No gas existed in the pleural sacs, nor in the pericardium. The tumor over the chest and neck was plainly emphysematous and crackling, and easily reduced by multiple punctures. The bowels were tympanitic. The other pathological appearances were those of typhoid fever, viz., softening of the spleen, ulceration, and enlargement of Peyer's glands, some injection of the mesenteric glands, a very fluid condition of the blood, and a softened and uncontracted condition of the left ventricle of the heart.

CASE 2.—The second case occurred in a private of the East Kent Militia, stationed at Malta, æt. 20, admitted with all the symptoms of typhoid fever, who died of that disease on the 9th of September, 1856, after being eleven days in hospital. During life he had a well-marked rubeoloid eruption, symptoms of ulceration of the

ileum, with hypostatic pneumonia. About forty minutes before death he used a bed-pan, and it was noticed that his body about the neck and chest appeared enlarged, and "cracked" on pressure. He had used no exertion, nor any straining. The post-mortem rigor ensued, as usual, quickly after death, and was slight. He died at three A. M., and his body was examined at half-past twelve P. M. same day, nine hours and a half after death. The weather was not remarkably warm, and the body had not undergone the slightest decomposition. The external surface about the chest and lower part of the neck was occupied by a diffused tumor of a clearly emphysematous nature; and, as in the other case, the swelling gave exit to air by puncture, more or less subsiding at the same time. Upon raising the sternum, it was found that the lungs were emphysematous, not collapsing much by the pressure of the external air. The pericardium was distended with air completely; the left ventricle, and no portion of the arterial septum contained any; but the right side of the heart was distended. Air existed also in the pulmonary artery; none was found in the pulmonary veins. The lungs were much congested at their base, probably chiefly the result of position, but no false emphysema, or rupture of the pulmonary tissue existed anywhere. The jugulars also contained air. The blood was frothy in the hepatic venous system, from admixture with a gas; but no air appeared to exist in the portal system. The veins of the spleen and kidneys also contained air: both the *venæ cavæ* contained air; indeed, this condition was general to the venous system. Tympanitic distension of the abdominal viscera existed also. The lesions were those of typhoid fever, an enlargement and ulceration of Peyer's glands, similar exactly to the last case.

ART. 55—*On the Sphygmoscope.* By Dr. SCOTT ALISON, Assistant-Physician to the Hospital for Consumption at Brompton.

(*Lancet*, Jan. 10, 1857.)

The sphygmoscope, or cardioscope, measures the extent of the impulse of the heart. By means of it the mind is assisted in estimating the impression made upon the hand by the shock of the heart. In the investigation of many properties besides extent, this instrument affords evidence which the hand is scarcely fitted to supply. The sphygmoscope notes the very instant the impulse commences, the exact period it lasts, the stage of time (if any) which elapses between the impulse and the diastole, the moment of the commencement of the diastole, the time of its duration, and the pause (if any) between it and the next systole. It marks the unity or the divided character of the contraction or the diastole, and the rates of velocity of the respective parts when the movements are divided. The phenomena occurring in one impulse period are visibly compared with those occurring in another. With the aid of mediate or immediate auscultation, the relations of the heart's movements are made out with great delicacy and accuracy. It seems to indicate the relative time of the arterial beat, in all parts of the body, with the cardiac impulse; the arterial beat being discovered either by the hand, or by a small instrument of the same construction as the sphygmoscope, and by means of india-rubber tubing laid alongside the chief instrument.

The extent of the impulse, as indicated by the sphygmoscope, the same as when the hand is employed, is most in children, in women, and in tall thin men; in the nervous and excitable; in those suffering under phthisis in its latter stages, hypertrophy, or hypertrophy with dilatation of the heart; while the instrument is little affected by the soft, fatty, or flabby heart. The very fat scarcely influence the instrument. The sphygmoscope usually indicates a uniform rate of systole: sometimes it marks a difference of rate between the commencement and the conclusion; and a division has been noticed in one or two cases. The same observations hold in respect to the diastole. No pause is usually observed at the conclusion of the systole, but in one or two persons a slight stop has been noted. Contrary to what might be expected, it is only very rarely that any distinct pause is indicated between the conclusion of the diastole and the commencement of the concluding systole. The impulse of the heart is indicated by the rise of the instrument, the diastole by its fall. The first sound of the heart is synchronous and isochronous with the ascent, and the second sound is synchronous with the first part of the fall. The finger applied to the radial artery feels the arterial beat at the commencement

of the fall; a small instrument applied to the same artery, and having its glass tube placed beside the heart instrument, is affected at the instant the latter instrument begins to fall. The radial pulse, estimated in either way, is likewise synchronous with the second sound of the heart. The synchronousness of the commencement of the fall of the heart instrument, indicating the commencing diastole of the radial pulse felt by the finger and indicated by the small instrument, and of the second cardiac sound, is ascertained by the corroborating and mutually guiding evidence of three senses—viz., the eye, the touch, and the ear. This important fact is opposed to the teaching of both physiologists and pathologists. While the radial artery beats only at the conclusion of the rise of the instrument,—i. e., behind the commencement of the systole by the whole period of the duration of that movement, which is equal to half a second in the case of a man whose heart beats sixty times in a minute, and whose systole and diastole are of equal duration, and in whom no pauses are made out,—no appreciable interval is made out between the rise of instruments placed upon the most distant parts of the body. The simultaneous rise of distant arteries, and their equal allochronousness with the cardiac rise, is seen by placing the instruments close together. While the heart instrument rises the arterial instrument falls, and *vice versa*. The pulse beat may be conveyed through four or more feet of elastic tubing, without loss of time. Thus, a small, short glass tube applied to the radial artery, and another supplied with four feet of elastic tubing adapted to the same vessel, rise at the same instant of time. The diastole of the pulse is shorter than the systole of the heart, and the contraction of the artery always continues till the next diastole or pulse. When the pulse intermits, the contraction equally continues till the next pulse. In disease, the impulse may be greatly reduced or altogether lost, as in emphysema and double hydrothorax. The impulse area is increased in hypertrophy with dilatation, and the impulse that may be found, displaced, raised as high as the second rib, or lowered as much as the eighth. The displacement may occur to the right side. Systolic murmurs, like the first sound of the heart, are heard during the ascent of the instrument: they are isochronous. Diastolic, aortic, and pulmonary murmurs are heard during the descent, and the sound and the fall are isochronous, unlike the healthy second sound and the fall—the healthy sound occupying only the first part of the fall. The healthy sound depends upon an act occurring at the first part of the diastole; the murmur depends upon an act—viz., regurgitation—taking the whole period of the diastole. *Fremissement cataire* has hitherto been found to occur during the ascent of the instrument,—i. e., with the ventricular systole. This has been felt during the rise, while regurgitant arterial murmur in the same patient has taken place during the fall. The sphygmoscope gives intimations of cardiac impulses which fail to give any appreciable cardiac wave.

For the purpose of restraining the elevation of the præcordial region in the act of inspiration, and thereby securing the unmixed cardiac movement, a border of wood is supplied to the cup of the instrument, and by means of this the præcordial region is slightly compressed. Modified, this instrument is converted into a pneumatoscope, or breath-explorer. It gives the duration of inspiration and expiration, and of pauses when they occur. When expiration is divided, the fall of the instrument is divided. No pause has been observed between the completion of inspiration and the commencement of expiration. But in some persons a very long pause—one-third of the inspiratory period—has been noted between the completion of expiration and the commencement of inspiration. The comparative extent of inspiration in the two sides of the thorax, or in different parts of the same side, is exhibited by different instruments having their glass tubes brought together for inspection. By means of two instruments so arranged, it has been found that the commencement of the respiratory acts at the top of the chest and at its base is simultaneous, contrary to the views of some teachers. The external inspiratory muscles and the diaphragm act in perfect unison.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 56.—*Glycerine and Borax in cracked Tongue.* By Dr. BRINTON.

(Dublin Med. Press, April 22, 1857.)

Dr. Brinton had under his care an inveterate cracked tongue, which had baffled all attempts at alleviation for many years, and which could not be referred to any syphilitic poison. It rendered eating, and especially speaking, very painful. Dr. Brinton made use of a favorite remedy of his in such cases—viz., borax dissolved in a lotion of glycerine and water (two scruples, one ounce, and four ounces respectively). It at once gave marked relief; and after a few days, during which it was the only remedial agent, the improvement seemed increased by iodide of potassium and bark taken internally. The patient has now considered himself well, and discontinued the lotion for some weeks, and the cracks are only visible as depressions in the mucous membrane.

ART. 57.—*On perforating Ulcer of the Stomach and Bowels.*

By Dr. J. BOWER HARRISON.

(Pamphlet, 12mo., Churchill, pp. 68, 1856.)

From some cases which have fallen under his own observation, and which are detailed in this pamphlet, Dr. Harrison is led to believe that it is possible to arrive, even during life, at a tolerably certain opinion as to the existence of this terrible malady. The signs are—

- 1st. The suddenness of the invasion, and the acute pain and tenderness of the abdomen.
- 2d. The effect of liquids in aggravating pain.
- 3d. The effect of change of position in altering the seat of pain, as well as in aggravating it.
- 4th. The absence of *urgent* vomiting or diarrhoea.
- 5th. The comparatively early collapse.
- 6th. The absence of other apparent causes, as hernia, pregnancy, or poison.
- 7th. The existence, generally, of previous chronic dyspepsia.

ART. 58.—*Obstinate regurgitation of the Food treated by Inhalation of Chloroform.*

By Dr. ISAAC TAYLOR, Physician to the Bellevue Hospital, New York.

(New York Journal of Medicine, Nov. 1856.)

This case was read before the New York Medical Association:

CASE.—“September 1, 1855, I was requested to visit a married lady, æt. 27 years, who had suffered from chronic vomiting for several weeks. She had just returned from Newport, R. I., where she had gone to enjoy the benefit of sea-bathing for the more complete restoration of her health, which had been delicate for the last few years, but had somewhat improved the few months previous to her going to Newport. Whilst she was at Newport, the affection of the stomach commenced. In the early part of August—I think the 6th—she had been bathing, and walked from the beach to her residence, a distance of one mile, which fatigued her very much. This, with the unpleasant information she had received by letter after her return, from a near relative, producing some excitement of mind, was believed to be the exciting cause of the malady. When I visited her, I found her looking cheerful, and her mental energies lively as usual. No depression of spirits; there was not much, if any, emaciation since I last saw her, July 19; there was more feebleness; pulse natural; skin the same in feel and function; tongue clean and looking natural. The countenance did not present the appearance of any serious disease of the stomach or of the abdominal organs; appetite was good, and she enjoyed her food with some relish. The bowels were not regular, nor had they been for some time, which was the reverse of what had formerly been the case, having been subjected to a form of chronic diarrhoea for the last two or three years, at intervals. She had been married for several years; was of a leuco-phlegmatic temperament, and had had five or six miscarriages. A subacute ovaritis had existed, and which, under treatment, yielded during the spring. The diarrhoea also ceased

previous to her leaving for Newport. She vomited, or rather regurgitated, her food after every meal, and whenever any fluid of the smallest quantity was taken, and seldom without something was swallowed. There was a slight burning sensation in the region of the cardiac extremity of the stomach, under the *scrobiculus cordis*, after she had rejected what she had taken. There was no pain on pressure over the region of the stomach; no tenderness; no enlargement was perceptible over the abdomen; no tenderness of the spine, but tenderness, the size of a quarter dollar, in the right iliac region, corresponding to the lumbo-abdominal nerves in this section of the abdomen; urine natural, and no albumen; the menstrual function was normal; there was no disease of the uterus. This organ was normal in size, position, and appearance. The ovaries also the same. The food or drink was returned, with very little change, as soon as swallowed, without nausea, and without convulsive effort or change of countenance. She had not thrown off any blood; acidity sometimes was present, and more so during the first week than ever afterwards during the time I was in attendance. The contents of the stomach, provided the patient had eaten or drank a larger quantity than usual, would be regurgitated, as a general rule, mouthful by mouthful, till the whole was eliminated. Sometimes, however, it would be rejected in larger quantities at a time. It usually occupied her from a half hour to one hour and a half to reject her food and drink. Solid food was partly digested, and other times not. She had been treated homœopathically while at Newport, and also by the regular method of treatment.

"From the appearance of the patient, and the manner in which the contents of the stomach were rejected, I considered it a case of regurgitation, and not vomiting, and that the malady appeared to be seated in the eighth pair of nerves, and the solar or semilunar plexus of nerves of the stomach was incidentally involved; that the stomach was not diseased in any of its tissues at the time. I did not consider it, therefore, as merely hysterical or as sympathetic of any uterine trouble, or of any internal organ. This opinion was expressed to the family the day following. The treatment, with this view of the case, was principally by those remedies that would have an influence over that portion of the nervous system. The alkaloids were first resorted to, and then the various sedative preparations. *Cannabis Indica*, in the one-sixth of a grain, was of some service. McMunn's elixir opii, in five-drop doses, with five drops of vinegar, repeated every few hours, after meals and during the time of meals. The various mild ferruginous preparations were tried; chloroform internally with camphor; nitric acid upon the stomach; blisters alone and dressed with the alkaloids; epispastics, not only to the stomach, but to the spine; also dry cupping to the spine along the greater part of its track; stimulating liniments of chloroform, with aconite, &c., were used. Nutritious enemata were also resorted to. In truth, everything that could be suggested, and that was deemed advisable, was made trial of. Her diet was restricted, and cream and milk, in teaspoonful proportions, were administered every half hour. This treatment seemed to prostrate her so much that she was permitted to eat whatever she pleased, and in this manner, although the food was regurgitated, she was sustained better, and, as I believe, only in this way. Out-door exercise was resorted to as much and as often as her strength would admit of. As nothing I had suggested in the treatment of the case appeared to afford any benefit, Professor Joseph M. Smith was invited by me to visit her, six weeks after I first saw her, and two or three weeks after this visit of Prof. Smith, Dr. C. D. Smith was invited to join Prof. Smith and myself. Under the treatment then advised, the malady still continued without any change for the better.

"As no favorable result had ensued by March, she was advised to make trial of a sea voyage. She bore the sailing remarkably well, so much as to merit the appellation of being 'the best sailor aboard of the ship,' and improved as respects her general strength, but she was not benefited in the least while at sea, respecting the regurgitation, nor when she arrived at Paris. She there came under the supervision of Sir Joseph F. Olliffe, who had associated with him Professor Trousseau during the whole of the time she resided there, which was three months. She was also visited by Prof. Rayer. The opinion of Prof. Rayer was, that it was a severe case of gastralgia. The views entertained by Sir Joseph and Prof. Trousseau were—I quote from Sir Joseph's letter to me, June 18, 1856: 'It is a case of obstinate regurgitation, unaccompanied with organic lesion, but from its antecedents—the

anterior uterine affection, the frequent miscarriages, and the manner of invasion of the malady,—we both were impressed with the idea that the uterus was the *point de depart* of all the mischief. We determined, accordingly, to establish a point of irritation on that organ, by applying the actual cautery, and selected the anterior labium of the cervix on which there existed a small ulceration.' The treatment of these gentlemen proved of no avail, and the usual internal methods of treatment for affections of the stomach were also instituted, with the like result. Hydropathy was tried, as well as electro-magnetism.

"On the 8th July, the patient once more presented herself to my notice, without any change for the better. She was more emaciated, and weighed about eighty-three pounds, as was afterwards ascertained. For several days after she returned, nothing was suggested till she had recruited from the effects of her sea voyage, and, on the 17th July, after a slight breakfast, consisting of toast and tea, and as soon as she had swallowed it, and before it was regurgitated, she was brought under the partial influence of chloroform, and as she did not reject her food after fifteen minutes, the inhalation was continued for one and a quarter hour, and during that time no regurgitation occurred. There was, while under the effects of the chloroform, considerable uneasiness and distress in the stomach, which was perceptible from the moaning of the patient, and the vermicular motions of the stomach, while the food was undergoing the process of digestion. Fifteen to twenty minutes after the chloroform had been given, she regurgitated part of her food, and continued to do so from three quarters to one hour, but not to the same extent as previously. After the trial of the chloroform that day, she did not appear much feebler than before it was taken. Her food, July 17th, was of a light nature, and smaller in quantity than she had usually partaken of; it was rejected, but not as soon or as much. The following day, July 18th, she was allowed to remain quiet, with the same light nourishment as the day before. On Saturday, July 19th, at half-past two P.M., directly after she had eaten her dinner of, beefsteak, tomatoes, potatoes, bread, and some brandy and water, the chloroform was administered, and continued to four P.M., one hour and a half, and to the same extent of partial anesthesia as before. No regurgitation occurred till half-past four P.M., and then it was at long intervals, and in mouthfuls, and nothing like the quantity she had eaten. The distress, judging from the moaning of the patient, and the writhing motions of the body, was more severe, and the attempt to regurgitate more evident. This, I presume, was owing to the larger quantity of food she had eaten, and of a more solid nature than before. In the disgorging of the food there was some acidity. No food that evening was allowed till next morning, July 20th, when the light food she had taken to her breakfast was not cast off as soon or as much; and, during the afternoon, after another light meal for dinner, the same thing recurred but to a partial extent. At eight P.M., she was much enfeebled, but this was attributed to her not having partaken of the usual quantity of food she had been accustomed to, and some brandy and water was advised in small doses. At ten P.M., there was a little regurgitation, with some acidity. Ord. mixture composed of spts. ammonia comp. bi-carb. potass., nit. potass., and hydrocyanic acid in solution, and three tablespoonfuls of this mixture were given. The medicine in this quantity was retained. In one hour afterwards, as there was some nausea, it was given again and retained—a symptom in the treatment of the case which was very gratifying to perceive, for so large a quantity had not been retained as long before since she was taken sick; and although I had, during the evening, my suspicions awakened to the possibility of her improvement, I felt at this time stronger encouragement to believe my patient was in a fair way of recovery. One hour after the last dose, as my patient had not slept during the day, and but little the evening previous, I gave her a pill composed of Indian hemp, quarter gr., and watery ext. of opium, one gr., and one hour after this, a second. After a short interval of time, as she appeared inclined to sleep, I left her till half-past seven A.M., directing that some chicken iced jelly should be carefully and nicely prepared, which was given in teaspoonful quantities every hour for three hours, to be again resumed for three hours; this quantity in such a given time was continued till the next day, and then it was given in dessert-spoonful quantities, with teaspoonful doses of brandy and water. The third day, July 23d, the nourishment was increased to tablespoonful proportions, every ten or fifteen minutes, till a sufficient quantity of food was taken, and with a gradual increase of

other kinds of food, and under the general advice and directions given, she improved so much as to be able to leave for Lebanon Springs, August 6th, and continued to improve during a sojourn of four weeks, in the mountain region, so as to gain fifteen pounds during that time, and she is at this time enjoying as good health as previously; nor has any further evidence of the malady manifested itself from the time it ceased, July 20, to the present moment."

ART. 59.—*Case of Gangrene of the Liver.*
By Dr. J. T. BANKS, King's Professor of Physic.
(*Dublin Hospital Gazette*, Dec. 8, 1856.)

Cases of gangrene of the liver are of extreme rarity, so rare that one case only fell under the notice of Andral and Rokitansky. This case, moreover, differs from the greater number of the cases which have been placed on record, in that gangrene of the liver was the only lesion existing, and that other organs did not present any similar or cognate affection.

CASE.—On Friday, the 21st November, a man, æt. 60, presented himself at the Whitworth Hospital; he had walked from his home, which was a considerable distance from the hospital, and was admitted in the afternoon.

The following facts relative to his history were obtained, partly from himself, and partly from his daughter:—He had been a farmer, and lived in the county of Meath until six years since, when he came to reside in Dublin; his health had been excellent, and he was a person of great bodily strength; he weighed generally about sixteen stone. His circumstances were good, and he lived "rather freely;" but of late years he had experienced reverses which preyed very much upon his mind. He had been in the habit of drinking largely in the days of his prosperity, but had not done so for a considerable period.

His own statement, and that of his family, fixed the preceding Saturday as the date of the commencement of his illness. He is said to have been quite healthy up to that day, but he fretted much, on account of failure in business. On Saturday he was seized with vomiting, and severe pain in the stomach and right side; the pain in the side he compared to the sensation of pins sticking him; he had also severe headache. For the following two days he remained in the same condition, but on Tuesday, feeling better, he walked out. In the course of the day he was attacked with shivering, and so severe were the fits that, in describing them, he said he could only compare them to the ague. On Wednesday and Thursday he remained in bed, and Friday morning his family perceived that he asked questions at random, appearing not to be quite himself. It was then proposed that he should go to an hospital. On admission, he was immediately placed in bed, and stimulants freely administered by Mr. Crosbie, my clinical clerk, who found the patient in a state of extreme debility. On the following morning (November 22d) I found him almost pulseless (the heart's impulse scarcely perceptible, and the sounds extremely feeble); he had vomited repeatedly, his breathing was rapid, the surface of the body pale, and the temperature low. There was not the slightest trace of jaundice; his countenance was indicative of great distress; he complained of pain in the right side, extending across the epigastrium. On examination, the liver was found considerably enlarged, and the pain, which was complained of as constantly present, was greatly increased by pressure. It was evident that the liver was the seat of the disease, whatever might be its precise nature. After a minute examination, and on considering the case in all its bearings, I ventured to hazard a diagnosis. I supposed that the lesion of the liver had been intensely acute hepatitis, which had terminated in the formation of abscess. To this opinion I was led by the occurrence of repeated rigors. It was obvious that the man was rapidly sinking—there was a highly offensive cadaveric odor, more powerful than I had ever before perceived, and he expired at a very early hour on the following morning, the fifth from the occurrence of the rigors.

The body was examined in five hours after death. There was no appearance as if the deceased had labored under any protracted disease, the muscular development was above the ordinary standard. On opening the thorax the lungs were found slightly congested. The heart was larger than natural, it was covered over a considerable extent of its surface by a thick layer of fat; the left ventricle was

hypertrophied, the valves did not exhibit any lesion beyond slight thickening of the edges. The walls of the right ventricle appeared to have undergone fatty degeneration, and my friend Dr. Frazer, who kindly examined the heart microscopically, found that there was not only interstitial fatty deposit, but that the muscular tissue of the right ventricle had undergone fatty degeneration. The stomach and intestinal canal were free from disease; the kidneys were rather larger than natural, and hyperæmic. The liver, as it lay *in situ* appeared much beyond the normal size, it was bright red; there was no adhesion or other evidence of inflammation of its peritoneal covering.

On removing the liver and examining the concave surface, the right lobe over nearly its whole extent was found to be of a deep greenish-black hue.

On making an incision into the part some dark fluid flowed out, and the abominably fetid odor so characteristic of sphacelus was painfully perceptible to us. The greater part of the right lobe, but not extending to the convex surface, was in a state of gangrene, the hepatic tissue broken down and converted into pulp, presenting very much the ragged shreddy appearance of gangrene of the lung. Apart from the liver, it would not have been possible to determine with certainty to what organ this degenerated mass of putridity belonged.

The gangrenous degeneration had an abrupt termination, but there was no appearance of a cyst having existed. There was no cavity, nor a trace of purulent matter, it was clearly a portion of the organ, which had passed into sphacelus, not an abscess the walls of which or the neighborhood of which had become gangrenous. The remainder of the liver did not present any alteration from the normal state beyond simple hyperæmia. The gall-bladder was small, its walls thickened, and it contained mucus not bile.

ART. 60.—*Case of dislocation of the Spleen:* By Dr. HELM.

(*Wochenbl. der Gesell. der Aertze*, No. 37, 1856; and *Med.-Chir. Review*, April, 1857.)

In the observations on the case, it is stated that Professor Dietl details a similar case observed by himself, in the '*Med. Wochenschrift*,' 1854; and quotes three cases in another paper contained in the same journal for 1855. All the cases hitherto observed have occurred in females. It is due to an increase of the volume of the spleen, when there is not a coincident increase in the strength of its ligaments.

CASE.—B. G., a needlewoman, æt. 21, who had had ague for two years previously, was seized, on the 7th March, with violent pain in the left abdomen: this increased in intensity; and on the following day she was admitted into the hospital at Vienna, where she stated that, over-night, a tumor had formed in her abdomen, which could be felt between the ribs and the left ilium, of the size of a child's head. The splenic region was sonorous. The slightest contact produced intense suffering, and the rapidly increasing tympanitis soon prevented the possibility of feeling the tumor. There was great dyspnoea, but no apparent pulmonary or cardiac disease; the pulse very small; constant emesis. Death the same evening at seven P.M. *Post-mortem*: Nothing of consequence was observed in the cranial and thoracic cavities. The distended abdominal cavity contained about ten pounds of a chocolate-colored acid liquid, mixed with undigested food. The liver was pushed up, and anæmic. The spleen, quadruple the normal size, lay on the inner surface of the left ilium, its hilum directed upwards: it was torn from its connections with the stomach and diaphragm, and hung by a pedicle which was formed by the vessels and the cellular tissue accompanying them, the pancreas and the ligamentum pancreatico-lienale. The spleen was twice rotated upon its axis in such a manner that the pancreas was turned spirally round the pedicle. The stomach was pushed up into the left hypochondrium, so that its posterior wall was directed forwards. Its coats were converted into a gelatinous, dark, reddish-brown friable mass; and a space of the size of a dessert-plate, at the fundus, was completely diffuent.

ART. 61.—*Ergotine in Epidemic Diarrhœa.* By M. MASSOLA.

(*Gaz. Hebdom. de Méd. et Chir.*, Nov. 25, 1856.)

In a communication to the Academy of Medicine in Paris, M. Massola states

that he found great benefit from the use of ergotine in the fatal epidemic diarrhoea, which prevailed so extensively among the Sardinian troops in the recent campaign in the Crimea. From fifteen to twenty grains were added to \mathfrak{z} viii of water, and a tablespoonful of this mixture was given every half hour. M. Massola states that astringents, tonics, opiates or stimuli, were of little avail as compared with the ergotine.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 62.—*Hæmaturia produced by Mental Emotion.* By Dr. BASHAM, Physician to the Westminster Hospital, &c.

The following case, and the remarks which accompany it, are from a clinical lecture on certain states of the urine, symptomatic of disease of the kidney.

CASE.—The case of Edward B——, in Burdett ward, appears to illustrate this rare form of hæmaturia, the recurrence of the attack being invariably connected with mental disquietude. He is a shoemaker, æt. 43, of spare habit of body. He states that he is a teetotaller, and has been so for years; that about nine years since he first noticed his urine discolored with blood; its appearance was unaccompanied by any pain or constitutional disturbance; it alarmed him, and he sought advice. He was ordered a change of air, and cessation from his very sedentary employment. He states that he was relieved for the time, but that three years afterwards he suffered another attack. On this occasion he recollects that it was preceded by a sense of weight and pain in the loins. He was treated at Charing-cross Hospital, and on subsequent occasions at other hospitals, always with relief; the continuance of the blood in his urine seldom exceeding ten or fourteen days. During the last twelve months the hæmaturia has become more frequent, and he has had two attacks in the course of the last six months. On admission he complained of pain in the loins, and the urine was highly charged with blood. He is free from all other symptoms of disease: the chest is natural; heart sounds natural; the abdomen is flat, soft, and elastic; there is no fulness in the lumbar spaces, and no tenderness on deep-made pressure; the region of the liver does not exceed its natural limits. The appetite is good, the tongue clean, the bowels natural. Micturition is not more frequent than natural, nor is there any difficulty or pain. The urine is of a dark-red color, but is free from visible clots; allowed to rest, it deposits abundance of blood-disks. He was ordered to be cupped to ten ounces from the loins; to take five grains of gallic acid every four hours, and half a drachm of compound jalap powder every alternate morning, and a warm bath each alternate evening. The urine was examined by the microscope: numerous blood-corpuscles were visible, and many fibrinous casts entangling blood-disks in their substance. These fibrinous coagula had the appearance of having been moulded in the uriniferous tubes, and washed therefrom by the escape of the urine; their size suggested their formation in the straight tubes of Bellini. Ten days after admission, the urine was quite free from all vestiges of blood to the unassisted eye; it presented a faint albuminous cloud by heat and nitric acid, and, allowed to rest, it deposited a flocculent precipitate, which, by the microscope, was resolved into amorphous fibrinous masses, slightly stained with hæmatin; a few blood-disks were seen, but no other microscopic objects. The patient is free from all traces of lumbar pain, and he thinks that his bodily strength is increasing. Three weeks after admission he presents the same favorable condition: no trace of blood nor albumen in the urine; the same flocculent deposit of minute amorphous coagula stained with hæmatin, but no casts of the tubes, nor any blood-disks. The medicines were discontinued. On the fifth week from admission he complains of a return of the lumbar pain, but there is no alteration in the natural appearance of the urine, except that crystals of oxalate of lime were observed interspersed amongst the minute amorphous coagula above noticed. He was discharged in the month of August, 1855, and you have seen him from time to time attending to report his freedom from any return of hæmaturia; but the last visit he complains of great increase of pain in the left lumbar region, extending upwards to the shoulder of the same side. In October he brings a sample of his urine, and it is again blood-red, and possesses the same characters as when we first examined it; but it is unaccompanied by any constitu-

tional disturbance, and he states that he has no difficulty in passing his urine, nor is there any undue frequency of micturition, nor any local symptoms different from those when an in-patient. He adds an important fact: that these recurrences of bloody urine are always caused by some vexatious mental excitement. The man, it appears, is quiet, sober, and industrious, and, upon principle, totally abstains from all fermented drinks. His wife has no liking for water, but possesses the common prejudice in favor of alcohol, and, whenever she can command the means, indulges to excess; her demeanor towards her husband at these times is somewhat at variance with her marriage vows, and to avoid annoyance, our patient states that he has endeavored to effect a voluntary separation; that while he is left to himself, undisturbed, his malady disappears; but the moment he is subjected to visits from an inebriated woman, the hæmaturia instantly returns. He has noticed this sequence to be so uniform, that he firmly believes that the vexation and trouble to which he is occasionally exposed are the sole causes of his disease. I am inclined to think the man's inference not so far wrong or unintelligible as it may at first be considered. It may be readily granted that neither anatomically or physiologically is the connection between renal hemorrhage and mental emotion very apparent. It is true that certain mental emotions are known to excite, more or less, the renal function; but the cases are extremely rare in which a morbid state like hemorrhage can be traced to a similar exciting cause. The records of medicine, however, are not without such cases. Rayer, in his work on 'Diseases of the Kidney,' in treating of renal hemorrhage, mentions a case of hæmaturia (tom. iii, p. 359) brought on apparently by no other cause than mental excitement: "*Survenu presque-immédiatement après un violent accès de colère.*" The accompanying symptoms were, severe hypogastric pain, with heat and pain in the course of the ureters, and sensation of weight and aching in the region of the kidneys. He was quickly relieved by rest, warm baths, diet, and mucilaginous drinks.

I saw a gentleman last spring, seventy years of age, who suffered from occasional attacks of hæmaturia, traceable to no other cause than mental excitement. There were no gouty symptoms, or the least tendency thereto. He was a remarkably healthy, vigorous, country gentleman. He had consulted the most distinguished physician of our day, whose name is inseparably connected with renal pathology, and whose opinion, as the patient informed me, was in conformity with the views now expressed. This man, B—, has, in the course of the last summer, twice presented himself with a return of the complaint. You have seen him on these several occasions. The hæmaturia, when he appeared in June, lasted only three days. On the fifth day the urine was free from all trace of blood or albumen. Trouble and excitement preceded the attack. In July he had another attack; and so dependent is the hæmaturia on mental excitement, that on this occasion a very trivial circumstance seems to have induced it. It was a dispute with his employer as to the rate of remuneration he should receive for work done. On each of these attacks the symptoms exhibit the same peculiarity: a sense of weight and pain about the loins, but unaccompanied by any constitutional disturbance, greater frequency of micturition, or inconvenience or difficulty in that act.

"It is thus," proceeds Dr. Basham, "by the absence of all the usual symptoms of irritation of the kidney, such as are ever present in gouty inflammation, whether excited by the presence of calculus or not; it is the absence of constitutional disturbance, whether febrile or dropsical; it is the temporary character of the attacks, the urine in a few days returning to a clear and natural state, without any trace of albumen, or any morbid morphological element therein, that justify our excluding as the cause of hæmaturia all those organic diseases of the kidney in which hemorrhage occupies the position of a leading symptom, and attributing the malady exclusively to the operation of mental excitement. I confess that but for the authority of such an observer as Rayer, or the support which my present view of this case, receives from the opinion expressed by the eminent physician to whom I have previously alluded, that I had great difficulty in forming a satisfactory diagnosis of the nature and cause of the hæmaturia in this case. It is only after a very careful observation of the sum of the symptoms exhibited by the patient over a period of more than eighteen months, and observing during that period the strictly temporary morbid condition of the urine, the constant relation of this state of hæmaturia to mental emotion, that I came to the conclusion that the case might

fairly be classed with those that Rayer has spoken of under the name of hemorrhages renales essentielles (sporadique), and that we might attribute its exciting cause to the rare and exceptionable agency of mental excitement. I am very desirous of keeping this patient under observation, with a view of testing the soundness of the opinion and diagnosis brought before you in this lecture."

ART. 63.—*On the Pathology of Mellituria.* By Dr. GARROD, Physician to University College Hospital.

(*British Med. Journ.*, May 2, 1857.)

"As to diabetes being dependent, not upon any increased formation of saccharine matter, but on an imperfect destructive power existing in the blood, although most of the phenomena are explainable on this hypothesis, still it is by no means satisfactory, as at present there is no proof of this absence of power to effect the ulterior changes. And certain facts, besides those which I have already brought forward, appear to militate against the existence of this deficiency; for, there is no marked difference in temperature between diabetic and other subjects; and, in certain experiments made some years since by Professor Graham, no peculiarity was discovered in the amount of carbonic acid which they expire. Upon the whole, I should be disposed, at present, to regard diabetes as due, in the first place, to an increased formation of sugar by the liver, produced by some alteration of function in the organ; and at the same time that its glycogenic power becomes abnormally increased, I should consider that it loses the property, which exists in health, of arresting and changing into new principles (as fatty substances, &c.) those saccharine matters which are brought to it by means of the portal blood. If we view diabetes in this light, we shall, I believe, be able to explain all the phenomena which the disease presents; at the same time I am aware of no facts which can be brought forward in opposition to it. It explains, for example, why sugar can generally be detected in the urine of diabetic patients, when subjected to the most rigorous animal diet, and, at the same time, why amylaceous matters usually so greatly augment this saccharine impregnation."

ART. 64.—*On the Influence of Cerebral Maladies upon Saccharine Diabetes.* By M. E. LEUDET.

(*Gaz. Hebdom. de Méd. et Chir.*, March 13, 1857.)

CASE 1.—A woman, æt. 32, in the sixth month of her pregnancy, was attacked with loss of sight in the left eye, without any other paralytic symptom. This loss was accompanied by pains in the head and vomiting. Seven and a half months afterwards comatose symptoms came on suddenly, and went off gradually in the course of twenty-four hours. At this time there was paralysis of the third and fifth pair of nerves on the left side, with some softening of the corresponding cornea. There was complete loss of sensibility in the skin of the left side of the face, in the left nasal passage, and in the left half of the tongue. Along with these symptoms, there was urgent thirst, and a considerable quantity of sugar in the urine. Iodide of potassium was given, and under its influence the vision improved, the diabetes disappeared, and the paralyzed side of the face recovered its sensibility. After this, the ulceration of the cornea progressed, and the humors of the eye were evacuated. Five months later, the comatose symptoms returned without the diabetes.

CASE 2.—A woman, æt. 53, was attacked with hemiplegia, in the right side, and with frequently recurring epileptiform attacks. Two years later, symptoms of diabetes were developed. A year later still, the sugar in the urine gave place to albumen, and the patient fell into a cachectic state.

CASE 3.—A woman, æt. 39, in the sixth month of her pregnancy, was attacked with convulsions and paraplegia. These symptoms continued for some time, and then gradually passed off, with the exception of occasional fits of giddiness. Six years later, she became the subject of repeated hemorrhages, which paved the way, first to dyspeptic symptoms, and then to saccharine diabetes.

CASE 4.—A woman, æt. 80, was attacked suddenly with hemiplegia on the left side. Eighteen months afterwards she began to suffer from thirst, and her urine

was found to contain sugar. Last of all, her right foot became gangrenous, and she died.

These cases are not accompanied by any comment of importance, and they furnish no other particulars beyond those that we have given. The author refers to certain cases of a similar kind, which have been reported by Drs. Goolden, Rolasky, and others.

ART. 65.—*On the collateral Symptoms of Mellituria.*
By Dr. GARROD, Physician to University College Hospital.

(*British Med. Journal*, April 11, 1857.)

To the question, "Are there any symptoms, saving the saccharine state of the urine, which can be regarded as pathognomonic?" Dr. Garrod answers, "I know of none upon which I should venture to rely. Certain phenomena, however, very generally exist; and these I will now briefly notice.

"Perhaps one of the most constant is a certain amount of œdema of the legs, which, in some instances, may be so slight as readily to escape detection, unless specially sought for. Since my attention was first directed to its frequent occurrence, I believe I have seen no patient, in whom the urine has been distinctly saccharine, where it was absent: in some cases, the amount is so slight that it appears to be little more than a loss of elasticity of the integuments over the tibia, but still it has been distinctly marked. In real diabetes, it often becomes very decided, and in the later stages considerable œdema and swelling of the legs not uncommonly ensue. The occurrence of slight œdema in cases where the renal secretion is augmented, is somewhat peculiar, and shows that it depends upon the morbid condition of the blood, and has no reference to the renal function.

"Another very common phenomenon is the appearance of some cutaneous eruption, or some affection of the subcutaneous cellular tissue. I have been consulted by several patients with such, and have discovered a saccharine condition of urine, evidently most closely connected with the skin-disease, in the relation of cause and effect. In the majority of cases, the eruption has been herpetic in character; now and then scaly; in some, pruriginous; in others, it has assumed the form of boils and carbuncles. From what I have hitherto observed, I am much inclined to think that these cutaneous affections are more marked in cases of saccharine urine unattended with diuresis, than where the urinary secretion is greatly augmented; as if, in these latter cases, there was less accumulation of sugar in the blood, on account of the establishment of free outlet by the kidneys. Dr. Prout had noticed this, for he makes the following remark: 'Were I permitted to draw a general inference from my experience, I should say, that diabetes usually *follows* cutaneous affections, and accompanies (perhaps *precedes*) the affections of the cellular tissue. Thus I have several times heard patients observe that they were formerly subject to eruptions in various parts of the body, but that such eruptions disappeared after the diabetic complaint became established; nor do I remember more than one instance in which diabetes actually accompanied a severe cutaneous affection.' Within the last few weeks, I had a patient under my care, suffering from diabetes, who exhibited from time to time a large ring of herpes circinatus upon the right cheek; and I am of opinion that there was some distinct connection between the intensity of the skin affection and the amount of the renal secretion, one being in an inverse ratio to the other. Not many months since, I correctly diagnosed the presence of saccharine urine in a gentleman, mainly from finding that, without any very evident cause, he had been suffering for several years from a succession of herpetic eruptions in different parts of the body.

"Pruritus not unfrequently accompanies a saccharine condition of the blood; and several instances illustrating this fact have occurred in my own practice. There also very commonly exists in these patients a tendency to low forms of inflammation, a difficulty of healing parts when injured, and a liability to furuncular and carbuncular affections. In many of these cases, the tongue exhibits in some degree the characters we have before described. There is often increased thirst and dryness of the skin; and, although the patient may be quite unconscious of it, some augmentation of the urinary secretion; but this latter may be insufficient to cause any increased frequency of micturition, and hence pass unnoticed."

ART. 66.—*On Gangrene in connection with Mellituria.*
By (1) Dr. MARCHAL (de Calvi); and (2) Dr. GARROD.

1. (*Gaz. Hebdomadaire de Med. et Chir.*, Dec. 5, 1856.)
2. (*British Med. Journal*, April 18, 1857.)

1. At a recent meeting of the Academy of Medicine in Paris (2d December, 1856), M. Marchal related a third instance of gangrene which had supervened upon mellituria. The gangrene seized upon a wide space in the nape of the neck. The subject was a physician who was suffering from diabetes, but who was not aware of the fact.

2. Upon this connection between gangrene and diabetes, Dr. Garrod remarks, in his recent Gulstonian lectures—"I have in some few instances seen *gangrene* in connection with diabetes, and have no doubt that there is a close connection between the two affections, in the relation of cause and effect. In one case, a female, æt. 33, who appeared to have suffered from diabetes for some years, gangrene of one leg came on a few weeks before her death. This patient had also, during the last few days of her life, a purulent discharge from the right ear; and, on post-mortem examination, a considerable quantity of pus was found upon the membranes of the brain. Another and more interesting instance occurred in a gentleman, about 68 years old, who consulted me last year, and whom I found laboring under well-marked diabetic symptoms, with strongly saccharine urine. I ascertained from him that the disease had certainly been present for many years; and that, about twenty months before I saw him, he had been laid up for several weeks with gangrene of the base of one toe; the cicatrix was still well marked. My patient was totally unable to account for the affection, for he had received no blow or injury upon the part."

ART. 67.—*On the prognosis of Mellituria.* By Dr. GARROD;
Physician to University College Hospital.

(*British Med. Journal*, April 18, 1857.)

"Diabetic patients *may* permanently recover. Several instances have been related; but those well-authenticated are exceedingly few in number. I cannot say I have ever seen a diabetic patient, whom I have known to have been affected with the disease in a well-marked degree, suffering, for example, from the thirst, dryness of skin, and great diuresis, *permanently* lose all traces of sugar from the urine. I have, however, been assured by patients that they were formerly diabetic, and I have been unable, after repeated examinations, to find sugar in their urine. In many of the slighter cases, where the urine has been distinctly saccharine, and the patients have experienced symptoms doubtless arising from the morbid state of the blood, as the herpetic eruption, &c., I have seen the renal secretion become perfectly normal, and remain so as long as I have been able to keep the patients under my observation.

"From what we have now shown of the liability of diabetic patients to be affected by the occurrence of secondary affections, by shocks and injuries of various kinds, and from what we have stated as to the rarity of their ever completely getting rid of the disease, I fear we cannot fail to regard the prognosis as anything but favorable; but at the same time I am convinced that in many instances life can be greatly prolonged, so as to enable the patient to reach at least a moderate old age. To effect this, however, the strictest attention must be paid to diet and regimen, and the avoiding of great mental exertion and over fatigue of body."

* * * * *

"There is one point connected with the supervention of secondary diseases in diabetes to which I would wish particularly to draw attention, as it is apt, if passed over unnoticed, to be a fruitful source of error. I allude to the alteration which the urine often undergoes during these affections; it is not very uncommon to find a complete absence of sugar, a sign often regarded as favorable, generally, indeed, as a proof of the efficacy of some particular mode of treatment which a patient is pursuing at the time, but which is in fact too frequently a symptom of some

secondary disease which may speedily terminate in death. I could quote many instances illustrative of this; one or two, perhaps, may not be without interest.

"A gentleman, about five years since, consulted me, having all the characteristic symptoms of diabetes; urine strongly saccharine; specific gravity 1040, &c. After a few months every trace of sugar suddenly disappeared; but this apparently good sign was only induced by the rapid supervention of phthisis, of which he soon died. Within the last two months I had a patient in the hospital laboring under diabetes and phthisis in a somewhat advanced stage; and it was interesting to watch the increase and decrease of the diabetic symptoms (including the specific gravity of the urine), alternating in an inverse ratio with those of the tubercular affection.

"Lastly, I may mention the case of a lady who had suffered from diabetes for many months, but whose urine became perfectly free from sugar during, and for a short time after, a mild attack of scarlatina. The importance, then, of the knowledge of the disappearance of sugar under these circumstances cannot be too firmly insisted upon."

ART. 68.—*On the treatment of Mellituria.* By Dr. GARROD,
Physician to University College Hospital.

(*British Med. Journal*, May 16, 1857.)

"I consider," says Dr. Garrod, "attention to *diet* of the utmost importance; and, without this, I believe that other means are almost if not entirely useless. In certain stages of the disease, the diet is advantageous in proportion to its freedom from amylaceous or saccharine matters; the nearer it can be obtained free from these, the greater is the benefit likely to accrue to the patient. The nitrogenized matters should not be excessive in quantity, at the same time that due allowance must be made for the inability of the patient to assimilate amylaceous principles. In consequence of the appetite being generally above the healthy standard, and also to prevent the disgust which a rich animal diet is apt to produce, it is most desirable to introduce certain non-nutritive materials into the diet, which give bulk to the aliment, satisfy the hunger, and at the same time make the azotized and fatty matters more palatable and acceptable to the patient. To effect this, I know of nothing equal to the bran bread of Mr. Camplin. In addition to the bran or gluten bread, I consider that certain green vegetables, as water-cress, greens, and lettuces, may be advantageously allowed in small quantities; as a diet quite free from vegetables, if continued for any length of time, will inevitably lead to the production of scorbutic symptoms.

"The liquid portion of the diet should also be kept as low as possible; and diabetic patients often derive much comfort from holding small pieces of ice in their mouths, instead of drinking copious draughts of water. The washing out of the mouth also with cold water sometimes effects the same object. Alcoholic liquors should be used sparingly; perhaps the best is a little good bitter ale, or small quantities of pale brandy freely diluted.

"With regard to the administration of drugs, I believe that in many cases but little advantage is derived from them; if, however, the nervous system is irritable, small quantities of opium may be useful; if there is anaemia, iron preparations, as the metallic iron in the form of the *fer redut*, or the ammonia-citrate or phosphate of iron should be administered; and if the skin remains harsh, ammonia salts in small doses, combined or not with other remedies, as the warm bath. If the emaciation be great, or phthisis threaten, cod liver may likewise be used; for, although I have shown you that these drugs, when given in large doses, and for a limited period only, produce no sensible diminution of the saccharine secretion; yet we may regard it as a fact, that everything which leads to an improvement in the health, by removing any other abnormal state that may be present, tends, in the long run, to ameliorate the diabetic condition; hence great advantage is derived from change of air and scenery, relaxation from business, and other such hygienic means, especially the avoiding of cold east winds, the use of the flesh-brush, and warm clothing. I have said that in certain cases I believed that weak alkaline drinks, as the Vichy waters, or alkalies given in other forms, are occasionally

of advantage, especially if the functions of the liver be disturbed, or any amount of irritation of the stomach be present."

ART. 69.—On a new mode of treatment in Saccharine Diabetes. By M. PIORRY.

(*Gaz. Hôdom. de Méd. et Chir.*, Feb. 17, 1857.)

M. Piorry is of opinion that sugar is indispensable to the maintenance of life (he founds this opinion upon the researches of MM. Dumas and Cl. Bernard), and on this account he thinks that diabetic patients ought to be supplied with sugar, and substances which are transformable into sugar, in order that they may repair that unnatural waste which is consequent upon their malady. With this view, he has brought the following case before the French Academy of Medicine:

CASE.—The patient is only described as being under M. Piorry's care in La Charité (No. 19 Salle St. Anne), and as suffering from diabetes, with very copious secretion of sugar. All the viscera were sound, with the exception of some slight hypertrophy in the spleen. From the 2d to the 12th of January, ten litres of urine were passed daily. During this time, certain feverish symptoms, which came on in the evening, subsided under the influence of quinine. On the 12th, the patient was directed to abstain as much as possible from all fluids, and to have daily a double quantity of meat, *with 125 grammes of sugar-candy*. This treatment was persevered in on the following days, and the result was that the quantity of urine fell to two and a half litres in the day—the specific gravity remaining the same, namely 1.060. On the 2d of January, 500 grammes of sugar had been lost in the twenty-four hours; from the 12th to the 24th, notwithstanding the addition of the sugar-candy, the daily loss of sugar was not more than 135 grammes.

This case was referred to a commission, consisting of MM. Andral, Rayer, and Cl. Bernard; and in the meantime it is only baldly stated, as we have given it.

ART. 70.—On the mode of preparing the Bran-loaf for the use of Diabetic Patients. By Mr. CAMPLIN.

(*Medical Times and Gazette*, May 2, 1857.)

Since the publication of his paper on the "*Juvantia and Lædientia in Diabetes*," Mr. Camplin has made improvements in the preparation of this important dietetic agent. The present formula is as follows:

"Take a sufficient quantity (say two or three quarts), of wheat bran, boil it in two successive waters for ten minutes, each time straining it through a sieve, then wash it well with cold water (on the sieve), until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a slow oven; if put in at night, let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill,* and sifted through a wire sieve of sufficient fineness to require the use of a brush to pass it through; that which does not pass through at first must be ground and sifted again, until the whole is soft and fine. Take of this bran-powder 3 ounces troy, 3 fresh eggs, 1½ ounces of butter, rather less than half a pint of milk; mix the eggs with part of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg or ginger, or any other agreeable spice.† Immediately before putting into the oven, stir in first 35 grains of sesquicarbonate of soda, and then three drachms of dilute hydrochloric acid. The loaf thus prepared should be baked in a basin (previously well buttered), for about an hour or rather more.‡

"Biscuits may be prepared as above, omitting the soda and hydrochloric acid, and part of the milk, and making them of proper consistence for moulding into shape.

"If properly baked, the loaves or biscuits will keep several days, but should always be kept in a dry place, and not be prepared in too large quantities at a time.

* The mill I use was made by Mr. White, of Holborn.

† The mixed spice sold in powder by the grocers answers very well, or a few caraway seeds, bruised, where economy is an object.

‡ A specimen of the bran loaf thus prepared was exhibited at Dr. Garrod's lecture, and tasted by the physicians and medical practitioners present, who expressed themselves very strongly as to its pleasantness.

"I would refer your readers to the paper already alluded to, for the circumstances under which I was led to the use of this preparation, and I do this with the more confidence, as subsequent experience establishes the importance of the bran-loaf as a remedial agent, and confirms my general opinion on the treatment of diabetes."

Mr. Camplin adds: "If a proper mill for grinding the bran is obtained, it may be easily prepared;* it is by no means unpalatable, and as it contains scarcely any starch,† it at once checks the formation of sugar, and arrests the whole train of morbid actions."

"The bran biscuit may be purchased of Mr. Smith, baker, of Gower Street North, and a bran-loaf or cake, nearly resembling the above, of Mr. Blatchley, confectioner, near the Pantheon, Oxford Street; both these parties prepare a biscuit or cake which answers well medically, but is not so agreeable as that prepared under my own direction. The difference is probably owing in a great measure to their not having hitherto used mills of sufficient fineness. I have reason to expect that they will henceforward remedy this defect."

ART. 71.—*A Case of persistent Sarcina in the Urine.*

By Dr. J. W. BEGBIE, Physician to the Royal Infirmary, Edinburgh.

(*Edinburgh Medical Journal*, April, 1856.)

The observations in respect to the occurrence of the sarcina in this case may be stated as follows:

1st. *Its persistent presence*: In a period of little longer than two months, Dr. Begbie examined the urine on ten different occasions, and he always found the sarcina present.

2d. *Its being present in the fresh urine immediately after micturition*: an observation made on two separate occasions.

3d. *The sarcina being unaccompanied by torulæ*: as is generally the case in the vomited matters, the evidence of a fermentative change.

4th. *The sarcina being present in urine, the reaction of which, though acid, very speedily became neutral and alkaline.*

5th. *The sarcina being distinctly visible in its perfect form for many days after the urine became highly alkaline.*

CASE.—"On the 10th of November, 1856, my advice was requested by a gentleman about 60 years of age, of studious and somewhat sedentary habits, on account of the following symptoms. Severe lumbar pain, felt chiefly upon exertion being made, and for some time after meals, with a frequent desire to pass water, though the demands did not appear to arise from the quantity of urine discharged. This brief outline of the case was communicated to me by letter. As these symptoms appeared to arise from renal or vesical affection, I requested to make a careful examination of the urine.

"On the 12th, a specimen of the urine was sent to me for this purpose—it had been passed the same morning.

"On the 13th, I examined it at the Infirmary, in company with my friend and house physician, Mr. William Hill. It was of pale straw color, with a distinct mucous sediment; odor faintly urinous; of neutral reaction. Sp. gr. 1.025; depositing phosphates on the application of heat; not coagulable. Under the microscope numerous sarcinae, smaller in size, but otherwise precisely similar to the sarcina ventriculi, were at once detected; there were also present a considerable amount of epithelium, and a few small crystals of the ammoniaco-magnesian phosphate. The day after the examination of the urine was made, I saw the patient for the first time. He was of a stout, rather corpulent frame, and his appearance did not indicate failing health. He informed me that for many months he had been subject to various dyspeptic symptoms, including want of appetite, foul tongue, with unpleasant taste in the mouth, flatulency, uneasiness in the stomach after

* The grinding of the bran, which is the only part of the preparation requiring labor, might be performed in most of the hospital cases by the patients themselves.

† Gluten bread, if prepared with care to wash away the starch, is excessively disagreeable, and cannot be persevered in for any length of time. The French gluten bread is not so disagreeable as that which I have had made at home, or which has been prepared for me by our best pharmaceutical chemists, but contains 20 per cent. of starch (according to Bouchardat), whilst a specimen of bran, prepared as here directed, was found by Dr. Marcet to contain only two and a half, and of course the whole loaf contains scarcely 1 per cent.

meals, and confined bowels. In addition to these, there had been urinary and nervous symptoms; the former comprehending the lumbar pain, and the frequent calls to void water, to which reference has already been made; the latter, some degree of despondency of spirits, and incapability at times for mental exertion. At an earlier period, symptoms of a more precise character, as regards the urinary organs, had been present. He had on one occasion suffered very suddenly and unexpectedly from retention of urine; the assistance of an eminent surgeon had then been sought, and the catheter passed. About the same time the bladder was sounded, under the impression that a calculus might exist. No stone was detected, but since then two small concretions had been passed along with the urine. Regarding the case as one of dyspepsia, connected with a tendency to phosphatic deposits in the urine, I endeavored to enforce such attention to the ordinary rules of health, particularly as to diet, bodily and mental exercise, as we know to be so generally useful in such circumstances. For the regulation of the bowels, small doses of rhubarb and bicarbonate of potash were prescribed; and I further ordered the use, firstly, of the diluted phosphoric, and then of the nitro-muriatic acid, in doses of twenty drops, thrice daily; the latter, not so much from the known effect of the continued administration of acids in causing the disappearance of phosphatic deposits, as on account of the general tonic virtues possessed by the combined acid.

"On the 22d, that is, in the course of ten days, I again saw the patient, and was pleased to receive a favorable account of his state. He felt a material improvement as regarded the dyspeptic symptoms; and though the uneasiness in the back and the frequent calls to micturate continued, he was by no means discouraged, and readily yielded to my desire that he should continue the plan of treatment prescribed.

"On the 21st, the day previously, I had the second opportunity of examining the urine: its condition and characters were exactly similar to what were found on the former occasion, the sarcina, in particular, being present in very considerable amount.

"On the 27th, I examined a specimen of the urine passed on the previous day. Color pale straw, clear, with a small amount of white mucous sediment; odor faintly urinous; reaction neutral. Sp. gr. 1.028; phosphates deposited on the application of heat; not coagulable; no trace of sugar; presence of chlorides and sulphates determined. Urea existed in considerable amount. Under the microscope, sarcina, and crystals of the triple phosphate, as on former examinations.

"On the 10th of February, I examined a specimen of the urine of the 9th; the condition and characters were precisely the same as formerly, with the exception of the specific gravity, which was 1.026, instead of 1.028. On that day I saw the patient still suffering from the lumbar pain, though in less degree; but as regards his other ailments, decidedly relieved. On the same occasion I examined a specimen of the urine immediately after it was voided, and found it to contain the sarcinae in as great number as when the urine had been kept for one or more days; the reaction of the urine, when thus examined, was faintly acid, and it did not contain crystals of the triple phosphate. It does not appear to me necessary to make any further remarks at present in regard to the case itself, which, except from the occurrence of the sarcina, has no point of special interest; at the same time, the short detail of its nature and progress which I have given, seemed to be required."

ART. 72.—*Rupture of the Bladder from over-distension.*

By MR. A. G. FIELD, of Brighton.

(*Medical Times and Gazette*, Dec. 13, 1856.)

Rupture of the bladder from over-distension, without the application of violence, is of extreme rarity. Rokitsansky speaks of it as a very rare occurrence; and Sir B. Brodie mentions one such case in St. George's Hospital, and refers to but one other seen by Sir Everard Home.

CASE.—E. P., æt. 72, had for many years been the subject of enlarged prostate, with its usual accompanying ills. On the 30th of September I was requested to visit him, as he was suffering from retention of urine. I found the bladder

much distended, and the urine dribbling away, what passed being highly offensive and thick, from admixture with mucus. There was considerable fever; tongue thickly coated, great pain and prostration. Stimulants and opiate enemata were given, and the bladder was frequently emptied by means of the catheter, under which treatment he rapidly improved.

October 2d.—He got possession of the catheter in my absence, and introduced it himself with tolerable ease; so that he continued the practice for two days; but on one occasion, having slept for a considerable time, when he awoke he found the bladder had become distended to a painful degree. This rendered him awkward in his hurried attempts to get speedy relief with the instrument, and he caused himself such excessive pain, by trying to force the catheter quickly into the bladder, that he positively refused to allow me to repeat the attempt on my visit in the evening. The serious consequences of his refusing submission to this necessary means of relief were plainly set before him, but he obstinately persisted, saying he would rather die than again endure such suffering as he knew would arise from the introduction of the catheter. He begged for laudanum, to ease him out of the world. This was denied him, in the hope that, if he continued to suffer pain, he might submit to the advice which was given him.

8th.—He was much depressed, pulse failing, countenance pale and shrunken, great pain and tenderness over the lower part of the abdomen, no tumor, as of distended bladder, nor marked dulness on percussion over the hypogastric region. I now at length persuaded him to submit to the introduction of the catheter under chloroform. A very small quantity of the anæsthetic sufficed to produce insensibility. When the instrument reached the prostate, it diverged to the right; on being slightly withdrawn, it was passed easily into the bladder, but not a drop of water escaped. This was repeated at three different times, and an attempt was made to draw out some through the catheter by means of a syringe, on the supposition that mucus might obstruct the eye of the catheter; and other means were resorted to, for the purpose of clearing the tube of any possible obstruction, but without any useful result. He died on the 10th of October, retaining consciousness to the last, and suffering considerable amount of pain till within an hour or two of his death. My friend, Mr. Bacon Phillips, kindly assisted me in making a post-mortem examination.

On opening the peritoneum, a large quantity of turbid brown fluid escaped, containing flakes of fibrin; there were, also, other evidences of peritonitis. The ureters were dilated, and the kidneys healthy. The bladder was removed for more careful examination. The prostate was enlarged to three or four times its usual size; and on opening the urethra, a false passage was seen running half an inch into the substance of the left lobe. The mucous coat of the bladder was generally highly vascular, presenting, besides, several deep red patches. The muscular coat was hypertrophied, and presented bold fasciculi on its inner surface. Near the middle of the superior fundus was an opening, through which a large sound passed easily into the cavity of the abdomen; the edges of this opening were smooth and rounded, as if a portion of the mucous membrane had been sacculated, and had afterwards given way; the peritoneal covering yielding at the same time, had allowed the urine to escape into the peritoneal cavity. There was no extravasation into the subserous cellular tissue, nor anywhere external to the peritoneum.

ART. 73.—*Veratria and Morphia in Incontinence of Urine.* By Dr. THOMAS KERNARD, Assistant-Physician to the Blackwell's Island Hospitals, New York.

(*American Journal of Medical Science*, Jan., 1857.)

"CASE 1.—Moses K—, æt. 28, white, engineer, native of New York, was admitted into the Penitentiary Hospital, Blackwell's Island, May 12th, 1856, suffering from delirium tremens, with apoplexy, followed by complete paralysis, which kept him in an insensible state for three weeks, during which time he had to be fed with a spoon. On recovering from this, he had no control over his sphincter muscles, discharging both feces and urine involuntarily, for which he was treated during June and July without avail. On the 8th of August, he was placed under my charge, when I ordered him to rub the perineum three times daily with the following ointment:

R Morphiae Sulphatis, Veratria, ʒʒ gr. x;
 Axungiae, ʒj. Ft. ung.

This treatment was continued three days, when no further inconvenience was experienced, and the control over the sphincters was as perfect as ever before.

"CASE 2.—John K—, æt. 80, native of New York, was admitted to the hospital at the Almshouse, Blackwell's Island, on the 20th of September, 1856, for contusion from a fall. On examining him, and finding his clothes wet, I learned that he had had no control of his sphincter vesicæ for eight years, and was wholly unable to prevent involuntary discharges. Being unable to assign a positive reason for his state, I ordered him to rub the morphia and veratria ointment on the perineum three times daily, and in one week from commencing its use no further trouble was experienced.

"CASE 3.—John F—, æt. 56, native of Ireland, laborer, was admitted into the Almshouse Hospital, September 15th, suffering from paraplegia of four years' standing, two years of which time he has had no control over his bladder, but passed his urine involuntarily. I ordered the one-fifteenth of a grain of strychnia twice daily for the paralysis, and to rub the perineum three times daily with the morphia and veratria ointment. Two weeks from this time he was cured of the incontinence of urine, and went on rapidly improving till the end of a month, when he was discharged nearly well."

ART. 74.—*Lead in the Urine in cases of Lead-poisoning.*
 By Dr. SIEVEKING, Assistant-Physician to St. Mary's Hospital.

(*Medical Times and Gazette*, Feb. 14, 1857.)

"The masterly memoir of M. Melsens on the treatment of metallic poisoning by iodide of potassium has caused this preparation to be more generally employed for the purpose of eliminating metallic poisons that have combined with the tissues of the body. The views promulgated by M. Melsens were supported by strong experimental and clinical evidence, and so far as my opportunities of witnessing and treating cases of metallic poisoning have since enabled me to judge, I should be disposed fully to corroborate the remarks of M. Melsens with regard to the eliminative power of the iodide of potassium in these cases. I have, in fact, in numerous cases of lead poisoning, to which I may take another opportunity of adverting more fully, found that the iodide of potassium sufficed for the cure of the patient. Dr. Parkes, since the publication of the memoir of M. Melsens, has published a paper on the elimination of lead by iodide of potassium, in which he filled up a lacuna left in the memoir, by giving the proof, that during the administration of this remedy the lead actually passed off by the kidneys. The following may be offered as a further corroboration of the fact that the lead is eliminated by this channel. It were well if we were able to demonstrate with equal certainty the mode in which organic poisons are eliminated by iodide of potassium, than which we possess no more certain and trustworthy alternative."

CASE.—A plumber, æt. 34, was admitted into St. Mary's Hospital, under the care of Dr. Chambers, on the 7th January, 1857. He had had colic three or four times previously, but had experienced no symptoms of saturnine paralysis. On the 7th of January he was suddenly attacked with epileptic fits. He had a succession of fits, which lasted for thirty-six hours. When I saw him on the 14th of January, he stated that he had no recollection of anything that happened from the time of his admission into the hospital to the 12th of January; that he woke up with severe headache occupying the entire head, with vertigo, and found that he had lost the power of moving the left leg and the right arm; the left arm and the right leg continued normal both in regard to sensation and motion. There was decided diminution of sensation in the affected limbs, and the right hand was in a permanent semi-flexed condition, with very little power remaining of opening or closing the fingers. On first recovering consciousness, the people in the ward seemed to him as small as dolls, and the opposite side of the room seemed to be sunk forty feet below his own level. These erroneous impressions he was conscious of at the time, and they disappeared in four days. The urine was very scanty. There was a marked blue line round the margin of the upper and lower gums. I would remark that on testing the sensibility of both hands with an æsthesiometer (an instrument which

I have had constructed for the purpose of measuring the amount of sensibility in different parts of the body), I found no deviation from the normal standard on the 16th of January, as the patient was able, with the tips of the fingers of either hand, to distinguish a distance of less than one tenth of an inch; at the same time that the patient, when I first saw him, complained of want of sensation in two of the limbs, the same limbs were very tender, and a slight pinch caused pain, so that we had to deal with that singular perversion of the sensitive function to which the term *anæsthesia dolorosa* has been applied, though without regard to the etymology of the words. This susceptibility to pain remained after the ordinary tactile sensibility appeared to be restored. My friend Dr. Markham, who had charge of the patients of Dr. Chambers, kindly, at my request, prescribed, on the 10th of January, the iodide of potassium in ten-grain doses, three times a day. A rapid improvement was perceptible. The amount of urine rapidly increased; but, although on two occasions after commencing the iodide of potassium the urine of at least twelve hours was tested for lead, none was found.

"The fact that Dr. Bernays himself, the able clinical lecturer at St. Mary's Hospital, kindly charged himself with these analyses, will be a sufficient guarantee that no lead was present. I again ordered the urine to be collected from the 20th to the 21st of January, and although probably only about one half of the urine secreted had been preserved, owing to the remainder having been discharged in defecation, I obtained 860 cubic centimetres, of a reddish-yellow hue, and turbid. This was evaporated down nearly to dryness; I boiled the residue with nitro-hydrochloric acid, and filtered. The filtrate, on the addition of sulphide of ammonium or of sulphuretted hydrogen, gave a copious precipitate of the sulphuret of lead."

ART. 75.—*On the treatment of Pertes Seminales.*

By Dr. TROUSSEAU, Physician to the Hôtel Dieu, Paris.

(*Charleston Med. Journal and Review*, Sept., 1856.)

"In 1825," says M. Trousseau in a recent clinical lecture, "at which time I was interne at the *Maison Royale* of Charenton, Dr. Bleyne, adjunct physician of the establishment, spoke to me of one of his patients affected with impotence, who, seduced by the deceptive advertisements on the fourth page of the newspapers, had consulted a quack who cured him by introducing into the anus a sort of plug of boxwood which he made him wear. It struck me to be some trumpery manœuvre to excite the exhausted sense, or some lascivious resort like those of worn-out libertines in certain circumstances, and I took no more notice of it. Ten years later, in 1835, I had some little business with a young man twenty-six years of age, troubled with decided frigidity, and yet having an irresistible desire to marry. Seeing him plunged in profound melancholy, and learning that he seriously contemplated suicide, I sought in every possible way to relieve him. Then was recalled the remarkable cure mentioned by Dr. Bleyne. Immediately I contrived a kind of plug, and prescribed it to be worn in the anus, keeping it in position by means of bandages. Scarcely a fortnight had elapsed before several erections had appeared, and the seminal losses had become less frequent. My patient got married, and was fully competent to the discharge of the conjugal duty; he is living yet, and is by no means impotent.

"I sought to understand the rationale of this remedy, and was soon convinced that the charlatan had employed a means, the true scope of which he was far from comprehending, like M. Jourdain, who made prose without knowing it. In fact the plug, pressing necessarily and immediately upon the prostate and the ejaculatory vessels, hindered the spasmodic seminal losses.

"Since that time I have witnessed many patients affected in the same manner, and as I grow older I witness more of them, for one does not generally go to a young physician with a complaint regarded as disgraceful, but rather to an old practitioner who is supposed to be more indulgent towards these cases. The same remedy has often been by me successfully used.

"Something after the fashion of the apparatus used to sustain hemorrhoids, I had prepared an elastic band furnished with a metallic branch, very slight and elastic, at the end of which was fixed a truncated cone of ivory penetrating into the rectum and supported in front by two attached pieces connected with the band. This cone

was arranged in a very solid manner: it did not incommode the wearer much because of the great elasticity of all its parts. Besides, if the anus became chafed, I covered the ivory with caoutchouc.

"Subsequently, I endeavored to improve the apparatus, and to modify in some manner the form of the cone. M. Mathieu, a surgical-instrument maker, then conceived a sort of plug shaped like a lengthened olive; this was a considerable improvement, but afterwards M. Mathieu thought it possible to do without the bandage around the body, and to fix the plug or stopper without the assistance of bands. Hence he gave to the plug a sort of hour-glass contraction, around which the sphincter ani closed strongly, and the large portion without kept the instrument in the proper position. An opening was made through its longest diameter, which allowed the free exit of gas. The plug, retained in this manner in the rectum, presses upon the prostate and on the seminal vesicles, and this very often suffices, after a week or two, to check involuntary spermatie discharges, to restore to an impotent man his former virile aptitudes, and to prevent uncomfortable accidents to the moral and intellectual faculties.

"I would recommend this little apparatus, not only in cases of involuntary seminal losses, but also for nocturnal incontinence of urine. By employing these means, I have often seen the bladder restored to its normal tone, and have witnessed the cure of one of the most inconvenient and unclean diseases. It is scarcely necessary to observe that this plug cannot be applied to girls. In their case, in incontinence of urine, it might perhaps be introduced into the vagina at the same time that a small plug was adjusted in the urinary meatus; but you will readily perceive that you must resort to that only in the *last extremity*, when belladonna, and all other available therapeutic resources have failed; for the defloration of a young girl is always a serious thing, and a physician should assume that responsibility only when he has exhausted all other scientific means.

"I have frequently known my colleagues in consultations prescribe cold hip-baths, but I always prescribe myself very hot ones. I tell my patients besides, 'heat, to a degree which the hand can scarcely bear, four or five pounds of sand in a dish; tie it up tightly in a napkin, and apply it to the anus, the perineum, the scrotum, and the penis; keep it there half an hour or so until cool, and do the same to-morrow on getting up.' I do not know a more energetic antiphlogistic than caloric, nor a more severe irritant than cold. Put your left hand into warm water and your right into cold water; the former will be chilly all day, while the latter will be warm. When heat is applied for any length of time to a particular part of the body it gives rise to a reaction.

"Thus, sea-bathing is a powerful means of producing derivation towards the skin, and continued warm baths are potent agents in extinguishing its exaggerated sensibility. Physicians devoted exclusively to cutaneous affections, attack an eczema of the face by warm shower-baths repeated for two months. They put caloric in contact with the face, cold water causing eczema, which hydropathy proves conclusively.

"The action of caloric is coercive, antiphlogistic; the action of cold is phlogistic and fluxionary. This fact is conspicuously inscribed on the records of hygiene. Have the cook, the pastry-cook, and the baker, who pass several hours a day before ovens heated to 160°, red faces? While actually before the fire they may have, but do they afterwards? Have the workmen who pour out melted ore, or who hammer red-hot iron, a very high color? On the contrary, when away from the heat, they are pale and sallow. Fluxion succeeds defluxion.

"Observe, then, that it is not in a contradictory spirit that I would substitute warm for cold, but because there are really strong motives for so doing. In general, whenever I hear of any remedy, I trouble myself very little as to the source whence it comes, I revolve it about in my mind and endeavor to comprehend it. If it appears to me good and useful, I apply it; and should it succeed, I recommend it. It matters little whether it comes from a quack or not, if it is really worth anything. I may have for the originator the most profound contempt, but nevertheless I apply the idea for the good of my fellow-men.

"A very worthy physician, Dr. Lebatard, was very much surprised, some time ago, to see all his patients troubled with sprains getting well under the treatment of a certain individual. He obtained information of the process used, and, accordingly,

putting it into practice, he kneaded or compressed the foot until the swelling entirely disappeared, and the patient was cured. M. Lebatard, being an honest practitioner, published the fact. This I call doing a useful thing.

"Returning, then, to the use of caloric in the treatment of seminal losses, I repeat that when this agent is applied for any length of time on a part of the body, it gives rise to a reaction. The spermatic emissions may, perhaps, under its influence, be augmented for the first and second night, but they afterwards rapidly diminish and the erections become more and more firm. The compressing apparatus and caloric are then to be used conjointly with the means recommended by Professor Lallemand.

"When the seminal losses are produced by relaxation, and you are assured that there exists no calculous affection, you must have recourse to cold baths and to a hydro-therapeutic régime. This state is diametrically opposed to the preceding, and it is not astonishing that an entirely different treatment should succeed. You may prescribe nux vomica internally, and apply the little compressing apparatus, &c. After very frequent spermatic losses, there may occur nervous disorders so serious as to endure even after the cure of the local affection, their proximate cause. This is an unfortunate complication, and you will have to consult those who have made these diseases—these monomanias with hypochondria, and inclination to suicide, these paraplegias and general paralysis—their special study.

"Should you devote your whole attention to the treatment of seminal losses, you would soon find yourself able to relieve nearly all, and even to cure the majority of cases. But be on your guard against those patients who are very rapidly cured, who set up too soon the cry of victory, and who entertain you about their recovered energies and their well-tested prowess; for those who have once suffered from involuntary seminal discharges always run great risks, and if they are not careful, sooner or later, may come the renewal of the infirmities which I have mentioned. In such case you will do well to make your patients take preventively the same medicine which may have succeeded at first, and to continue it for a fortnight two or three times a year. '*Prudence*,' says the proverb, '*is the mother of safety*.'"

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 76.—*On Contagious Furunculoid.* By Dr. LAYCOCK, Professor of the Practice of Medicine in the University of Edinburgh.

(*Edinburgh Medical Journal*, Oct., 1856.)

In this lecture Professor Laycock says he was the first to point out that boils were ever epidemic, and that they were associated, as to cause, with other eruptive diseases. This he did in a clinical lecture he delivered at York, in February, 1851, and published at the time. At the same time he laid much stress on the contagiousness of this affection. He now adduces some interesting facts in relation to these points—observing that up to 1851 the epidemical relation of the *materies morbi* to malignant pustule, phlegmon, and onychia, had not been manifested. Dr. Laycock proceeds:

"In my published lecture of February 25th, 1851, I illustrated several varieties of the disease by cases, and indicated the following principal forms: 1. Simple furuncle. 2. Effusive inflammation of the derma, manifested in the form of eczema, pemphigus, and phlyctenæ. 3. Suppurative inflammation of the derma, resembling impetigo and ecthyma. 4. Carbuncular inflammation. 5. Two or more of these occurring coincidentally. More recent observation shows that we may add to these—6. Sloughing gangrene of the lip, eye, tongue, vagina, scrotum, &c. 7. A diffused inflammation of the cellular tissue, returned to the registrars, as a cause of death of late years, under the term phlegmon. 8. Another form, seldom fatal, that of whitlow. I will now refer to each of these specially.

"1. *Simple furuncle.*—The course of the simple furuncle is very definite. An itching is usually first experienced, and then a small hard pimple may be felt in the skin, not larger commonly than a small pea. This enlarges from day to day, and the skin becomes red over it. About the fourth day the centre softens, and on the fifth supuration is established, with partial destruction of the subcutaneous

cellular tissue (the slough or 'core'). By the seventh day there is commencing cicatrization. Rarely more than four or five of these occur at once.

"2. *The furuncle, with vesication or pemphigus*.—In the furuncle with vesication, the inflammation is preceded by a vesicle; the pruritus is greater, the erysipelatous redness more extended, and, in bad cases, true phlyctenæ form. These may be prolonged to the fourteenth day. In a few rarely occurring cases there is a phlyctæna only.

"3. *Ecthyma*.—In the impetiginous and ecthymatous form, the boils are usually interspersed with ecthyma, impetigo, or eczema. It is not uncommon to find this variety preceded by a pemphigoid eruption, in which the serum is opaque and purulent, and terminating in crusts; This sometimes attacks the eye, constituting a sty.

"4. *The carbuncular form*.—When the disease is carbuncular, it may appear as true carbuncle, or as a spurious form, in which there is, in fact, a confluence or blending of furuncles. Both these are usually seen on the nucha, back, or loins. The true carbuncle may be either solitary, or, as is common, may arise amongst a number of furuncles.

"The eruption in all these forms is usually seen on the back, nates, thighs—less frequently on the legs and face, still less so on the trunk. The bend of the joints, or the ends of the fingers (as in whitlow), are not unusual situations. The seat of the disease will, however, depend upon the nature and locality of the exciting cause. Wherever a local irritation is induced, there will most probably be the seat of the specific inflammation. A blister is one of the commonest of the exciting causes; the application of a poultice, or of an irritant ointment, a slight blow, and the like, will also act as exciting causes of the disease. A crop of boils is a not unfrequent occurrence after an eruptive fever, as variola, scarlatina, the 'dengue,' &c. In these cases the cutaneous inflammation operates as an exciting cause, in the same way as the inflammation consequent upon a blister.

"The accompanying constitutional disturbance varies much. In healthy individuals it is not at all well marked—in the cachectic the tongue is usually coated, sometimes brown, the appetite impaired, the bowels constipated: occasionally rigors and febrile reaction are manifested, and great debility felt. This disease became prevalent in the clinical wards of the Royal Infirmary of Edinburgh during June, July, and August last, subsequently to the admission of a Dane, resident in Leith for nine months, who was affected with the pemphigoid and impetiginous form. In him it appeared principally over the sacrum, as a vesicle, followed by a superficial ulceration, surrounded by an inflamed areola, and covered by a thick crust. Interspersed amongst these were isolated pustules, with an indurated inflamed base. Under the use of quinine, with mineral acids and warm baths, the pemphigoid characteristic disappeared, but the impetiginoid furunculi were more numerous and larger. Unfortunately, other patients in the ward used the same bath in which this patient bathed, and when some of the crusts from his body (it was reported) were floating upon the water. Several of these were attacked with the same furunculoid eruption. The following history illustrates the origin and varied forms of the disease; on the 3d June, George Stewart, Ward 11, had a blister applied between his shoulders, which ran the usual course. On 11th June he complained of a pain in the seat of the blister, and on examination it was found that a number of pustules, with an indurated base, had appeared there, principally upon the upper and right edges of the space which the blister had occupied. They varied in size from a pin's head to a fourpenny-piece; some got no larger, but others increased in size, and suppurated, so that a whitish tenacious fluid could be squeezed from them. On the evening of the 16th June a large poultice was applied; next day blebs, like those seen on the Dane, were observed to be intermingled among the furuncles, containing an opaque purulent fluid, while near the angle of the right scapula, one of the furuncles was fully an inch in diameter. This at last became a large carbuncle, about three inches in diameter, containing the usual sloughy tissue. Another large boil also showed itself on the back, lower down, which, on being incised, was found to contain blood only. The treatment ordered in this case was the water-dressing to each separate boil, the careful removal of their contents, and the most sedulous attention to cleanliness. The result was a check to any further formation of furunculi.

"5. *The phlegmonous, phagedænic, and gangrenous forms.*—These seem to occur in individuals who, from some pre-existent morbid state of the blood and of the nutrient forces, are already in such a condition that the ordinary sloughing inflammation of the phlyctena, furuncle, or carbuncle, becomes exaggerated into rapid death of the tissue. The lip and vagina in children are specially prone to become the seat of phagedænic inflammation, not unlike hospital gangrene; more rarely, the scrotum and perinæum in the aged. The late Mr. Harvey Ludlow (when house-surgeon to St. Bartholomew's) called the attention of the profession, in 1852, more particularly to carbuncular inflammation of the lips and other parts of the face; Mr. Stanley and Mr. Lloyd have also observed the affection, and noted its alliance to carbuncular and furuncular inflammation. Happily, these cases are comparatively rare, for the destruction of the tissues is frightful as to extent and character.

"6. *Onychia or whilow, and suppurative inflammation of the fingers and palms, and the palmar and digital sheaths of tendons.*—These forms seem to be of rarer occurrence in the United Kingdom than in the United States and on the Continent. They are not unfrequently followed by contractions of the fingers, caries, &c. They are probably due to circumstances which bring the poison into immediate contact with the hand and fingers. I shall shortly adduce facts in illustration of this view. Dr. Hamilton Kinglake, of Taunton, has specially recorded the prevalence of whitlow in Somersetshire, in conjunction with boils and carbuncles.

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"Before entering upon the etiology, it will be useful to examine the pathological anatomy of the disease. It is primarily an inflammation of the derma and of the subjacent cellular tissue, ending variously, in accordance with varying conditions. When it attacks the surface of the derma, effusion of serum, of a sero-purulent fluid or of a bloody ichor, is the result; when it attacks the derma proper, the various forms of furuncle, carbuncle, or anthrax occur. It is an almost universally accepted theory, that the 'core' of the suppurating tumor known by these names consists of sloughing cellular tissue, combined with exudative deposit; and that the slough is consequent upon strangulation of the bloodvessels of the part by the distended and resisting tissues that surround them. There are various reasons for adopting this theory, if it were only necessary to explain the simple furuncular or carbuncular form of the disease. For example, it is in accordance with the theory that carbuncles and large furuncles are the most prevalent in those portions of the surface where the skin is the most dense, as the neck, back, nates. It is also in accordance with the theory, that the sloughing should be most extensive in those individuals in whom the vital energy is feeble, and a cachectic state is present which predisposes to inflammation of an asthenic type, such as that complicating nephria. But there are various phenomena which the theory does not explain. It does not explain the more diffuse inflammation and suppuration of the cellular tissue known as *phlegmon*, or that gangrenous form which attacks portions of the skin not at all dense, as the lip, vagina, and scrotum; and above all, it gives no explanation of that rapid and fatal gangrenous form of carbuncle known as the *pestis carbuncularis* of horned cattle, and which, when that disease is communicated to man, is *charbon* or the malignant pustule.

"These residual phenomena point, therefore, to another cause of the characteristic inflammation. This is probably a specific and communicable *materies morbi*, the operation of which, upon the living tissues, is to devitalize them. Experience and observation as to the spread of the epidemic, have convinced me that this doctrine is so important an element in the etiology, that without it we have in fact no trustworthy clue to the pathology and treatment.

"I have observed that the *materies morbi* of the contagious furunculoid is communicable—1, from one individual to another; 2, from one portion of the skin to another portion, in the same individual; and 3, that if this communication be thoroughly prevented, the progress of the disease in a family or in an individual is arrested.

"I have already mentioned examples of the probable communication of the disease from one individual to another, as having occurred in the clinical wards of the Royal Infirmary of Edinburgh. In a similar way, it has been repeatedly observed

to spread through families, schools, asylums, &c., where no precautions have been taken to prevent contagion. In such examples, it will usually be found that the affection, although slow in its progress through the population, attacks equally in succession the strong and the feeble, going on unmodified by diet, temperature, seasons, &c. Often, on inquiry, it will be found that the members of a family have had the disease subsequently to the admission into the family circle of a person affected with it. And, inasmuch as no other reason can be assigned for its spread, which shall with equal comprehensiveness explain it (all theories as to peculiar atmospheric conditions, peculiarities of diet, &c., proving insufficient), it is a reasonable and philosophical conclusion, that it is communicated from person to person.

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"The recent furuncular epidemic appears to have been generally prevalent throughout the world—certainly in the European and American continents, throughout the United Kingdom, and in all the British colonies. In England and the United States its appearance has been coincident with various epidemics. Typhus, influenza, cholera, small-pox, scarlatina, measles, hooping-cough, and croup, were epidemic in London, in successive years, coincidently with a largely increased mortality from phlegmon and carbuncle. In the years of the maximum mortality—namely, 1853 and 1854, the prevailing epidemics were cholera, scarlatina, measles, hooping-cough, and croup.

"In the summer of 1850, boils were widely epidemic throughout the United States; they were described as being 'almost universal,' and carbuncles as being common. The epidemic was coextensive with a lichenous febrile eruption, termed 'prickly heat,' and with the 'dengue'—an eruptive fever, having points of similarity with both influenza and scarlatina. In this epidemic the furuncular eruption was often a substitute for the ordinary cutaneous inflammation.

"The etiology of the ordinary, sporadic form of the cutaneous inflammations I have considered, does not throw much light upon the etiology of the epidemic. The recognized pathology of boils is, I am inclined to think, in a great degree erroneous; it is certainly a fallacy that they are depurative. Those which occasionally supervene in persons undergoing a rigid course of hydriatics, are usually mentioned as illustrations of this theory; but it appears just as reasonable a conclusion that the copious imbibition of water induces such a cachectic state as constitutes a highly predisposing cause of this peculiar form of inflammation. I certainly think that a patient is free from a fertile source of depressing irritation when he is free from them, and that if they occur, the sooner they are cured the better. One great fact, however, stands out distinctly, the severe forms of furunculoid, are constantly associated with cachectic states."

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Dr. Laycock adds in conclusion: "I have already indicated some of the sources of the *materies morbi*, but it is certain, I think, that these are not all. The local inflammation is of a kind induced by various septic poisons. Of these, that which appears to be generated during a severe and prolonged parturition, is one; probably the poison of puerperal fever is another, and of the Levant plague another. It remains to be determined whether the variolous poison may not, under certain circumstances, be the *materies morbi*; it may be equally a question whether the flesh of animals, dead of dysentery, typhus, pleuropneumonia, &c., may not, when used even as food, be a means of communicating the disease. As to all these points, there are analogies in the natural history and behavior of epidemical and communicable fever-poisons, such as to warrant cautious and careful inquiry."

ART. 77.—*On Circumscribed Atrophy of the Skin.* By Dr. REUSS.

(*Vierordt's Archiv*, Ht. 4, 1857; and *Med.-Chir. Review*, April, 1857.)

Dr. Reuss reports two cases of a disease of which he states he has found no description in authors, and which appears to be almost identical in its characters with what we ourselves witnessed in April, 1856, in a young woman.

A lad, æt. 15, at the end of 1855 had typhus, and while at its acme several parts of the skin were observed to undergo a peculiar change. They assumed a reddish-blue or reddish-brown color; under a slanting light appeared whitish, as an asbestine or satiny gloss, and sharply cut off from the surrounding skin. They formed

elongated streaks of half an inch to three inches in length, and were from one to four lines broad, and were all directed vertically or obliquely to the axis of the body. They were symmetrically arranged in both lower extremities below the trochanter major, above the patella, above the internal condyle of the femur, and across the outer side of the leg; altogether there were from twenty to thirty such streaks on each leg. The affected parts were sunk below the level of the surrounding skin; and when pressed, the bluish color disappeared, and one could see the blood return into the subjacent dilated capillaries. The sensibility of the parts was diminished. Three months later, the appearances had somewhat faded, but were essentially the same. The second case resembled the last, but was not so well marked: it occurred in a young woman, aged twenty-eight. The one we ourselves observed occurred in a servant girl, aged twenty-nine, who, after suffering from some severe abscesses, found that small white spots formed on the left side of the neck, extending from the sternum over the clavicle towards the spine—like zoster. The spots were sharply defined, very smooth, and bloodless; and looked as if the sub-epidemic tissue had been punched out. There had never been any elevation of the tissues or secretion. The outline was generally circular; or, where two or more spots had coalesced, the outline became oval. They varied in size from the point of a pin to a split pea. There was a small patch of similar white spots on the right hypochondrium. Her general health, at the time we saw her, was good.

Like Dr. Reuss, we failed at the time in meeting with anything analogous in works on skin diseases. In the fourth edition of Mr. Wilson's works "On Diseases of the Skin" (p. 378), which has just appeared, the affection is described under the name of *Morphea Alba*.

ART. 78.—On the "*Tache Meningitique*." By Dr. BAINES.

(*Medical Times and Gazette*, Dec. 6, 1856.)

Dr. Baines states that he had first become acquainted with this morbid phenomenon during his visits to the Hôpital Necker of Paris. Dr. Trousseau was wont to draw the attention of his pupils to the occurrence of a red mark or stain which was readily observable on the skin of a large number of hydrocephalic children; to this he gave the name of *Tache Meningitique* or *Tache Cérébrale*.

Dr. Baines then proceeds to describe it as of a reddish color, varying from a faint tinge to a more vivid raspberry hue; in some cases it has been so distinctly developed and so readily excited, that the patient's friends have drawn attention to it. Its development may be the result of accident, as when occasioned by the pressure or irritation of the bed-clothes, or portions of the child's dress, and in those cases it is chiefly observable on the face or neck; but it is more commonly intentionally caused, as by the pressure of the finger of the observer on the skin of the patient; when such is the case, a distinct red line marks the previous course of the finger. It is more readily observable in the face, neck, and chest, than on the extremities, and will often fail to be excited in the latter parts when it is most distinct in the former; rarely, however, the reverse is the case. Though most commonly seen in patients suffering from hydrocephalus, it is said to be observed in other cases, and Dr. Baines mentions one case of acute congestion of the brain, and another of acute pneumonia of children, in both of which this *Tache* was mentioned as existing during life; but in the latter case, though the brain was healthy after death, the child had died from convulsions. As to the stage of the disease in which it is most commonly found, the author thinks, from his observations, that it was more likely to be seen late in the disease, and he suggests that perhaps it might have reference to the stage of effusion. With regard to its cause, in the present state of our knowledge of its nature, he could scarcely offer any sufficient explanation. He thinks that it could hardly be dependent upon simple atonic relaxation of the capillaries, as occurring in exhausting diseases, because it had been observed in acute congestion of the brain, and in acute pneumonia complicated with convulsions, but suggested that it was due to some altered relation between the supply of nervous power to the capillaries and the circulation, allowing of a ready dilatation of the superficial vessels when any irritation was applied to the skin. Several cases verified by post-mortem appearances are narrated, in which the *Tache* was a prominent symptom. In one it was absent altogether, and

in another case which recovered, it continued as long as the symptoms of the disease continued, and then declined with them. It has been noticed also, as proved by the cases cited, though not necessarily in all such, in head cases dependent upon the irritation of teething and from worms, but what was of some practical value was the fact of its absence in cases of gastric and remittent fever of children, in which the most urgent and prominent symptoms were referred to the head. These remarks are supported by the cases quoted.

ART. 79.—On the prevention of Pitting in Small-pox. By Dr. ALEX. ROWARD, Physician to the Marine Hospital, Quebec.

(*Medical Times and Gazette*, Dec. 13, 1856.)

Dr. Roward's plan is to apply a strong solution of nitrate of silver (\mathfrak{z} to the \mathfrak{z} j), and he recommends it, not only on the ground of preventing disfigurement, but as tending, when applied to the face, to lessen the danger of cerebral complications by diminishing the intense inflammatory action on and in the exterior.

CASE.—John Henry S—, lumberman, æt. 20, well proportioned and athletic, was admitted under my care, at the Marine and Emigrant Hospital, Quebec, on the 23d of April, 1856. Three days after admission an eruption of small-pox made its appearance, which soon became confluent. Three days after the eruption presented itself I applied a solution of nitrate of silver all over the face, of the strength of one drachm of the salt to an ounce of water, which was much stronger than I had heard of having ever been employed before.

The patient experienced a grateful sense of cooling from the application, which also relieved the distressing itching and tension from which he suffered; and he begged earnestly to have the wash again applied. The practice was pursued daily till the 13th of May, when it was discontinued. The blackened cuticle now began to peel off, leaving the face perfectly free from pitting, while the hands in which the disease had been purposely allowed to follow its course, were deeply and numerously scarred.

Other striking beneficial effects were observed to follow the use of this strong solution besides the prevention of pitting. The inflammation about the face and head became diminished, and the itching and heat were lessened, while the application caused no pain, gave rise to no disagreeable odor, and was not followed by any secondary fever. The patient recovered completely from the disease, and is now a servant in the hospital.

"In addition to the above advantage," Dr. Roward says, "I believe an important step is attained towards the patient's safety by so materially diminishing the intense inflammatory action about the head and in such close proximity to the brain; and I am so strongly impressed with its utility in this respect, that I shall apply it not only to the face, but all over the scalp, in all future cases.

"Having every reason to be gratified with the result of treatment in the foregoing case, I mentioned the circumstance to my friend Captain Reeve, the Commandant at Grosse Isle Quarantine Station, and strongly urged him to recommend a trial of the same plan in the Quarantine Hospital when an opportunity should occur. He did so, and it was accordingly tested in four cases during the following months of June and July, with the most satisfactory results.

"These cases have been reported in the October number of the '*Montreal Medical Chronicle*,' by Dr. Von Iffland, Assistant-Physician at Grosse Isle; and I have received letters from that gentleman and from Captain Reeve and Dr. G. Douglas, the Medical Superintendent of the Station, acknowledging that it was from me they obtained the first idea as to the utility of a strong solution of nitrate of silver, in the ectrotic treatment of small-pox.

"I am well aware that weak solutions of the same salt have been recommended, but from their weakness they proved irritating and inefficient, and have consequently been abandoned. The solid stick of caustic has been applied to each punctured vesicle; but this process was found to be painful and tedious, and in confluent cases almost impracticable. None of these objections apply to the strong solution of one drachm to the ounce of water. Its application is free from pain, it has been proved to be highly efficacious, and its employment can be intrusted to a common nurse or attendant on the patient.

"Moreover, I would recommend its application to the mouth and fauces. I do not, however, recommend its application to the cornea when attacked with the small-pox pustule, as that organ demands special and separate treatment from the surgeon."

ART. 80.—*On the Secondary Eruption following Vaccination.* By Mr. Ross.

(*Lancet*, Feb. 14, 1857.)

The propositions which Mr. Ross endeavors to establish in this paper are—1st, that there are various forms of eruptive disease consecutive to and caused by vaccination; 2d, that these eruptions appear at different periods, and are subordinate to the specific laws of the vaccinia disease; 3d, that these eruptions are not prejudicial to the person vaccinated, but are rather evidences of the complete impregnation of the system, and of the protective efficacy of the act of vaccination. Notwithstanding the assertion by some authors that vaccination does not cause consecutive disease, the occurrence of such disease has been frequently noticed by medical practitioners; and even its varieties have been designated. Most works on diseases of the skin have some reference to such affections. There is not, however, any methodical analysis on record of such maladies, and they have been regarded rather as unimportant casualties than as legitimate sequences of vaccination. The desire, probably, thoroughly to establish vaccination in the confidence of the public has insensibly led to a depreciation of the after-symptoms, whereas it would have been more philosophical to examine the facts themselves, and to trace their actual connection, if any, with the original disease. There need be no fear that the great value of Jenner's immortal discovery will be impaired by an accurate acquaintance with all its phenomena. The whole number of secondary eruptions noticed by Mr. Ross during the period whilst he was conducting these inquiries was nineteen, and of these the specific character was recorded in eleven; the others were adverted to in general terms as "secondary eruption;" but he believes that the greater number, or the whole of them, were of the vesicular type. Of these eleven, one was a transient exanthem, three were papular, and seven vesicular. In three other cases an eruption appeared at the end of about three weeks, but whether these cases were attributable to vaccination or not, the evidence is not decisive. The vesicular eruptions varied much in character, sometimes being as small as millet-seeds, and few in number; at other times as large as a crown-piece, and looking as if one vesicle was comprised within the circle of another. The size of the eruption was frequently that of the cow-pock at the eighth day, which indeed it very much resembled, being a vesicle with a small central depression and circumferential redness. These eruptions were always preceded by fever, which was proportioned in degree to the number of vesicles thrown out. This fact proves the constitutional character of the affection. On this point the author remarks that he has several times seen patients suffering from pyrexia and general *malaise* on the day when in other cases an eruption has usually appeared; but of these he has taken no account. The pyrexia, however, has convinced my mind that the activity of the virus does not always cease with the drying up of the pock. Even after the local action has disappeared, there are periodical changes going on in the constitution—which are, according to circumstances, of greater or less energy, and which are manifested by fever and secondary eruptions. The most important point connected with these secondary affections is their periodicity. In some of the cases the eruption appeared on the tenth day from the day of vaccination; in others on the fifteenth day; whilst, in one case, the eruption was thrown out on the tenth day, it continued for a few days, then disappeared, and was observed again on the fifteenth day. In other instances, the eruption appeared both on the fifteenth and twentieth days, or thereabouts. These cases further show the periodicity of the affection, and seem to reconcile the discrepancies between the cases that occurred on the tenth and fifteenth days respectively. Much accuracy of observation is required to fix these facts, and the reports of parents must be taken with some allowance, and very rigidly examined. The surgeon should himself see the eruption, and he will be able to determine, after a very short experience, whether the eruption be one or two days old at the time it comes under his observation. The day on which the accompanying *malaise* occurred must be also taken into considera-

tion. Without such carefulness as this, the surgeon may be misled as to the precise day of the occurrence of the eruption, by the report of the mother, who may have failed to notice the rash on the first day. "Another source of error will be the development of the original pock; for I need not say that when vaccination is done with dry lymph, as it must necessarily be in rural districts under the existing crude and inefficient regulations, the development of the local and constitutional effects will vary from the genuine type, being often two days later than is proper—that is to say, a pock at the eighth day will be smaller than it should be, and will not reach maturity until the tenth. So frequently does this occur, that I have heard surgeons say that they prefer to take matter from a tenth-day pock, it being larger and fuller than the eighth-day pock. This is true only when dry lymph has been used, and not always true even in this case. I have known the pock to begin to be developed on the eighth day after the insertion of the lymph, and then run a regular course. These and others such are aberrations from the genuine type, and when they occur must be allowed in the calculation. Whatever variations may be observed in the secondary eruption may be referred safely to some irregularity in the primitive pock. The proper period from which to date the phenomena of vaccination is the formation of the vesicle, the symptoms anterior to this being variable. From the moment, however, that a vesicle is formed, with its attendant constitutional pyrexia, which occurs ordinarily on the fifth day, the phenomena, if the pock be genuine, proceed in regular succession, and may be safely calculated. Hence it would seem, if my observations on the secondary eruption be correct, that vaccinia, as a disease, is subject to a periodical evolution in the system, which is manifested by a critical eruption on the fifth, tenth, and fifteenth days.

"It is not my intention at the present time to discuss the characters of the primitive pock further than as they illustrate the phenomena of the secondary eruption. The constitutional pyrexia sets in on the fifth day, continues on the sixth, abates on the seventh, and recurs on the eighth day; it continues on the ninth, and abates on the tenth. On this day the secondary eruption generally appears. I have long held the opinion that the constitutional effects are not produced so much by the small quantity of lymph inserted under the skin, as by absorptions from the pocks; these being not merely final results of certain constitutional actions, as generally supposed, but means of thoroughly impregnating the system with the virus. They are laboratories of lymph rather than mere eliminants of a poison. Hence it is that the security of the system, according to Mr. Marson's observations, is in a direct ratio to the number of pocks induced. If we open a pock with a lancet we can exhaust it of all its lymph: if we wait a little we shall be supplied with a fresh secretion; and so on for an indefinite period so long as the pock maintains its activity. If the pock be not opened, we have a right to conclude that the same process of secretion is continually going on, and the excess of lymph, instead of being evacuated, as in the former instance, is absorbed into the system. There is no reason to think that absorption does not proceed from the surface of the skin under these circumstances, whilst it is the rule on all other surfaces of the body, whether mucous or serous. In fact, the functions of every organ are sustained by a due balance between the processes of secretion and absorption in unintermitting activity. Hence the constitutional pyrexia in vaccination commences with the formation of the vesicle; and hence, too, the number of vesicles is a measure of the immunity conferred. This argument holds good, I think, in small-pox and other similar affections, as well as cow-pock." Mr. Ross then recites the particulars of several cases illustrating his views, and continues: "I need not quote a larger number of cases, as they resemble each other very closely. A table accompanying this paper exhibits at one view all the facts I have been able to collect. It will be observed, in reference to the table, that the frequency of the secondary disease depends upon the time of year when vaccination is performed. During the summer, when the circulation is hastened, and the functions of the skin are actively performed, the consecutive eruption appears more frequently than in winter, when it is very rare. The winter is generally admitted to be an unfavorable time for vaccinating, as the coldness of the temperature depresses the vital powers, and tends to prevent, especially among the poor, the proper development of the pock. In consequence of the greater prevalence of the secondary eruption in summer, and

the suspicion with which it is viewed by parents, I have been accustomed to postpone vaccination as much as possible during the high temperatures of June, July, and August; and I think it would be better if this caution were generally observed, especially with private patients, for nothing can be more disagreeable to a surgeon than to find his little patient covered with an eruption which he did not anticipate. It is fortunate that the eruption rarely continues more than three or four days, and is frequently more evanescent, a circumstance which distinguishes it from the ordinary eczematous diseases. I may observe here, that no experience on this matter can be worth much that is limited to an observation of the pock on the eighth day, as is the ordinary practice in public institutions. Hence I do not regard as of any weight the objections of those gentlemen who, with such an experience, have denied the existence of a special secondary eruption. Being public vaccinator for an extensive district, I vaccinate a considerable number of children every week, at the present time, yet from never watching the cases after the eighth day, I rarely hear of instances of secondary eruption; but I have not the slightest doubt that I should discover them, as frequently as heretofore, if I followed the cases up as I did when I was conducting these investigations. I think that I have now adduced evidence sufficient, if not to convince absolutely, at least to induce a strong presumption in the mind of an unbiassed man, that vaccinia, under certain circumstances, is followed by a secondary eruption, special in its nature, though various in forms, which observes fixed periods of evolution, and is an integral part of the original affection."

ART. 81.—*Case of Sclerema, or Pachydermatous Disease.*

By Dr. R. M'DONNELL.

(*Dublin Hospital Gazette*, Nov., 1856.)

Cases of this kind must not be confounded with the sclerema of new-born infants (*sclérème des nouveaux nés*), a name given by Chaussier to an induration of the skin in infants.

CASE.—Catharine C—, æt. 24, was admitted into the Richmond Hospital under Mr. Adams' care, June 18th, 1854.

She continued for some months in the hospital as a patient; her complaint did not render her unfit for useful occupation, she accordingly received employment in the institution; she has therefore been now under observation for a period of rather more than two years.

As to her present condition, the integument covering the face, fore part of the chest, and arms, presents in a very marked degree that induration which forms the most striking feature of her disease.

On the face the skin is tense and shining; around the mouth, on the forehead, and more particularly across the nose, it seems as if tightened from contraction, and its rigidity interferes with the natural play of the features.

Across the chest the skin is so tightly drawn as to produce a feeling of constriction.

The hardness and stiffness are nowhere so great as in that covering the arms and hands. It is with difficulty movable over the deeper structures; it has altogether lost its pliancy and softness; it feels like brawn; one might as easily pinch up between the finger and thumb the skin on the back of a pig, as the skin over these parts. The free movement of the fingers is in a great degree impaired; the patient cannot perform any delicate handiwork; her former occupation of dress-making she has been obliged to abandon, from her inability to handle needles, &c. The contraction of the skin in the bend of the elbow prevents the possibility of straightening the arm; in attempting to lift heavy weights the skin in this locality has actually torn and become fissured, and in the bend of each elbow scars, the result of this, remain.

The tension of the skin over the knuckles, and the prominence of the lower extremity of the ulna, cause these points to ulcerate readily if exposed to friction; the power of feeling is slightly, if at all impaired. The skin on the back, on the lower part of the body, and lower limbs, is in a perfectly normal state.

The patient complains of pain in the hands like the stinging of nettles; this pain is made worse by exercise, is much relieved by bathing the hands in warm

water, and is most troublesome after going to bed at night. She suffers from dyspepsia, and has had at irregular intervals violent attacks of bilious vomiting, after which she observes a temporary improvement in the condition of the skin; in other respects, her general health is good; there is no derangement of the menstrual functions.

Cold seems to have been the starting-point of the disease; it followed a wetting she got four years ago while recovering from an attack on the chest.

The rigidity of the skin commenced in the right arm, and passed across the chest to the other; the face was attacked later.

In the case of this patient, only temporary benefit has been derived from the various modes of treatment which have been resorted to; from nothing did she derive so much advantage and relief as from frequent warm baths and the use of cod-liver oil, which, besides being administered internally, was rubbed in over the indurated integuments after each bath.

Dr. M'Donnell adds—

"Two cases of a closely analogous, if not the same disease, have been published by Dr. Hugo Fiedler,* as 'atrophy of the cellular tissue and of the skin.' One of these cases was that of a young woman 20 years of age. The disease came on slowly, commencing about the joints, and accompanied with swelling, and pains in the joints of the fingers.

"On her admission into the hospital at Dresden, 'her skin all over the body was stretched, firm, tight, and smooth, without suppleness or elasticity, adhering close to the muscles and bones.'

"The second case was that of a boy aged 13½ years, in whom the disease co-existed with rheumatism.

"Fuchs,† under the name of 'Cutis tensa,' has reported a very interesting case of the same affection. And Oulmont‡ gives another 'of a peculiar thickening and hardening of the skin,' in which the induration occurred in different-sized patches over the face and body. This case left hospital, so that there was no opportunity of watching the progress of the disease."

ART. 82.—*On the use of Guano in Skin Diseases.* By Dr. SCHRAMLI.

(*Schmidt's Jahrb.*, Bd. 90, § 168, 1856.)

Dr. Schramli says that he has seen very marked results from the use of guano as an external application in diseases of the skin, in impetiginous affections of the scalp, in psoriasis, in itch, &c. He uses the guano in the form of lotions (3ij to Oij), baths, and ointments (3as—3j to 3j axunge).

* 'Deutsche Klin.', 34, 1855.

† 'Klin. Bericht,' Göttingen, 1855, S. 192.
‡ 'Revue Méd.-Ch.,' Dec., 1855.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING INFLAMMATION.

ART. 83.—*On the topical application of Tincture of Iodine in Hospital Gangrene.*
By M. SURDUN.

(*Gaz. Hebd. de Med. et Chir.*, Jan. 12, 1857.)

THE cases of hospital gangrene which were treated in this manner, are said to have occurred on shipboard in a number of wounded soldiers, but no particulars as to time and place are given. The cases were seven in number, all amputations, two above the knee and five above the elbow. A pledget of lint was soaked in the tincture and bound over the stump by means of a bandage, after having first bathed the affected parts with chlorinated water. The application at first caused considerable pain, and opium was required to calm this and procure sleep; but the next day the pain had ceased and the stump had acquired a healthy appearance.

(B) CONCERNING TUMORS.

ART. 84.—*Illustrations of the pathology of Cancer.*
By J. Z. LAURENCE, Surgeon to the Northern Dispensary, London.

(*Pamphlet*, London, Richards, 1856, p. 59.)

In the first part of this pamphlet we find a good deal of interesting information respecting the classification of cancerous tumors, and particularly respecting two forms which the author proposes to raise into the rank of species under the names of *nævoid* and *enchondromatous cancer*.

Mr. Laurence allows that the claims of *nævoid cancer* to be considered as a distinct species must still be considered as doubtful, but he thinks that they are tacitly allowed by the nomenclature of eminent pathologists—as the *Carcinoma circoidees* of Müller, the *Carcinoma telangiectodes* of Virchow, and the cavernous cancer of Esmarch. Mr. Laurence has met with one case which we give; and he relates two cases which have fallen under the notice of Müller and one which is reported by Cruveilhier.

Mr. Laurence's case.—Edward W—, æt. 61, entered the Middlesex Hospital some years ago, for violent hæmatemesis, and, some time subsequently, for equally severe hæmaturia. Ever since he could remember, he had had a number of vascular tumors in different parts of his body. Over the outer third of the right pectoral muscle was one of the size of a small walnut; above it were two smaller ones; over the right deltoid muscle, one of about the size of a filbert. Above the right clavicle was one larger than either of these. He had a small one in the dorsum of the cleft of the right thumb, and one over the first phalanx of the left ring finger; several small ones about the neck, and one above the left clavicle. On the inside of the left angle of the lip were one or two, and on the mucous membrane of the inside of the cheeks, deep back in the mouth, were two or three of about the size of a pea on either side. The left half of the tongue was irregularly swollen out by

venous growths. On the glans penis were several such tumors, of about the size of those inside the mouth.

Curiously enough, although suffering from the effects of fistula *in ano*, when I last saw him in the hospital, under Mr. De Morgan's care, he had never had bleeding from the rectum, excepting twenty years ago, but appeared now to be subject to prolapsus of the anus. He was a good deal emaciated, and had a sallow flabby look about his face. Numerous minute varicose veins supplied the healthy blush on the cheeks; in these were several very minute vascular prominences.

These nævoid tumors varied considerably in appearance, and in their relation to the cutaneous structures. Some were entirely beneath the skin, under which they felt like rolling, round, encysted tumors, made but little prominence, and were rather appreciable to the sense of touch than to that of sight. Some, on the other hand, had the peculiar pale, venous-blue hue of the subcutaneous nævi of children; whilst a third set formed rounded, thin-walled, dark, purple tumors. They could all be partially emptied of their blood by pressure, filling again when this was removed. None pulsated in the slightest degree.

Here, then, we have a multiple dissemination of non-malignant tumors, which, by their presence, in all probability, in the hollow viscera, had given rise to severe local effects, but yet, after existing for years, had caused none of that undermining of the general health so often observed in conjunction with a single cancerous tumor, to all appearances, comparatively to these venous growths, innocuous by its mere local effects.

The claims of the *enchondromatous* cancer to the rank of a species Mr. Laurence regards as settled by two most conclusive cases, which are these:

CASE.—*Enchondroma of the testis: operation: death: autopsy: secondary enchondromatous deposits in the lymphatic and vascular systems, and in the lungs.*—Henry W—, æt. 37, received an injury to his back and his right thigh, two years before his admission into St. Bartholomew's Hospital, under Mr. Skey. Some swelling of the right testicle ensued; but this did not begin notably to enlarge till, a year afterwards, the organ got bruised by an iron bar falling on it. Before the patient was operated on, the testicle had attained a transverse circumference of ten and a half inches; was hard, heavy, and tender. The spermatic cord was similarly affected. After the operation, the tumor turned out to be an excellent example of enchondroma of the testicle, and to be composed of "tortuous, cylindriform, and knotted pieces of cartilage." The epididymis was healthy. The patient recovered well from the operation, but soon returned to the hospital, feeble and emaciated, exhibiting a breathlessness which, increasing, cut him off suddenly in less than three months after the operation.

At the post-mortem examination, the spermatic lymphatic vessels were seen to contain deposits similar to those in the testicle,* and "became connected at their upper part with a swelling of the size and shape of a hen's egg . . . probably a diseased lymphatic gland . . . which adhered to the vena cava inferior . . . and projected into the cavity of this vein." "Beyond this point, no affection of the lymphatic system could be traced . . . the growth in the vein was branched like a stunted leafless shrub . . . and in direct contact with the venous blood." Both lungs were enlarged by the formation in them of masses of cartilage in such abundance that the two lungs weighed eleven pounds and a half. "In many of the larger branches of the pulmonary artery, small shrub-like growths, like that in the vena cava inferior, were attached to the lining membrane." No other organ of the body was found diseased. "The cartilage, in every seat of its growth, was of the true or hyaline kind." Professor Paget very kindly showed me the various preparations above referred to, and also gave me a section of one of the lungs, of which I subjoin the following description from my note-books: "The section was crammed with cartilaginous tumors, of the average size of a hazel-nut. They were connected but laxly with the surrounding pulmonary tissue, and could be easily and cleanly

* It is not often that we have an opportunity of anatomically demonstrating the presence of morbid material in the lymphatic vessels. Sir A. Cooper relates an instance of cancer of the testicle, in which "the absorbents of the spermatic cord were very considerably enlarged, their coats thickened, and small tumors appeared at irregular distances, arising from a diseased and enlarged state of their valves. These vessels were entirely impervious, and contained matter similar to that found in the testicle." The thoracic duct, receptaculum chyli, and lumbar glands were similarly diseased. (Sir A. Cooper, in "Medical Records and Researches.")

enucleated with one's fingers. Each was enveloped in a thin pseudo-cyst of cellular tissue, which, branching inwards, subdivided each tumor into a number of small lobes. The cartilage was bluish and translucent, cut like other cartilage, and agreed essentially in its minute characters with that of the ordinary cartilage of joints. The matrix of the cartilage-cells was finely nebulous; the cells themselves exhibited great variety of forms—round, triangular, elongated, &c., and filled limited lacunæ in the matrix. In some instances, the cell occupied but a small portion of the lacuna, in others it filled it, and in most cases each lacuna contained more than one cartilage-cell. This was well defined, and possessed generally a round dark nucleus, and a good deal of coarsely granular matter."

The second case was under M. Richet, and is reported in the "*Gazette des Hôpitaux*," Nos. 71 and 95, for 1855.

CASE.—*Enchondroma of the scapula: operation: death: autopsy: secondary enchondroma of the lungs*.—A man, æt. 34, had had a tumor growing on the right scapula for four years: by that time it had attained the size of a child's head. M. Richet removed it, together with a considerable portion of the scapula. "The tumor originates from the bone, which it completely surrounds; it does not rise beyond the level of the spine of the scapula. It is enclosed by the periosteum. . . . It is composed of a tissue of a gelatinous appearance, but of the consistence of somewhat softened cartilage. This substance is homogeneous, transparent, traversed by filaments of fibro-cellular tissue, which appear to subdivide it into so many lobules or loculi.

"The microscopic examination made by Messrs. Giralde's, Broca, and Verneuil, proved that the tumor was exclusively formed of large cartilage-cells and nuclei."

The man died a fortnight after the operation.

At the post-mortem examination, at least thirty tumors were found in the substance and on the surface of the two lungs, some the size of a millet seed, the largest that of a nut. "This latter one offered all the external characters of an enchondroma; it was, in fact, cartilaginous tissue; and the microscopic examination, made with the greatest care by Messrs. Broca, Giralde's, and Robin, proved that these tumors contained nothing but cartilage-cells."

Rokitansky, without offering any further explanation, states, that "he has seen it (*enchondroma*), on several occasions, in the lungs;" and that "*enchondroma* is benign, provided it does not enter into any specific infectious metamorphosis."*

In the other parts of his pamphlet, Mr. Laurence discusses the question of hereditariness, and decides that cancer is not hereditary; and after this he considers the relation of cancer to tubercle, the relation of primary to secondary deposits, and the nature of cancerous diseases.

ART. 85.—*On the Cancerous Degeneration of Warty Excrescences.*

By Mr. BUTCHER, Surgeon to Mercer's Hospital.

(*Dublin Quarterly Journal of Medical Science*, Nov. 1856.)

In this paper, Mr. Butcher relates seven cases which illustrate that association between warty excrescences and cancerous degeneration, which has not met with all the careful attention from writers to which it is entitled. These cases show very clearly that, when once the ulcerative process is set up, there is never any amelioration, ever so temporary, no attempt at cicatrization; and that there is in addition a great liability to the appearance of encephaloid disease, either on the site of the original tumor or in the line of absorbents connected therewith.

In the same paper, moreover, Mr. Butcher relates four cases of encephaloid cancer occurring as an isolated manifestation of malignant disease.

* Since writing this, I have received a letter from Professor Rokitansky, from which the following extracts are made: "In those cases of enchondroma in the lungs, which I have seen, it was quite solitary." In the second paragraph, quoted above, from his work on "*Pathological Anatomy*," he is especially alluding to those deposits of cartilage met with in medullary cancers (e.g., in the testicle). In regard to the two cases of "enchondromatous cancer," on which I have founded this species, he says: "It is perhaps not well made out, that the enchondromata in the lungs were developed after the extirpation of the enchondromata of the scapula and testicle; they may perhaps have existed already simultaneously with those of enchondromata of the scapula and testicle." It will be remarked that the Professor suggests a different interpretation of the facts of these two cases, to that adopted by Professor Paget and myself. Which of these interpretations is more in accordance with the principles of inductive reasoning I leave to my readers to determine.

ART. 86.—*On the removal of Tumors.*

By Dr. SIMPSON, of Edinburgh.

(Medical Times and Gazette, Feb. 7, 1857.)

Dr. Simpson's plan is to introduce a hollow acupuncture needle or very small trocar into the tissue of the tumor, and inject a small quantity of chloride of zinc, perchloride of iron, creasote, or some other irritating solution. The effect of this operation is to destroy the vitality of the tumor, and to allow it to be separated by a process of enucleation.

ART. 87.—*Topical application of Nitrate of Potass in certain Erectile Tumors.* By Dr. MANGENOT, of Rambervilliers.

(Bull. Gén. de Ther., Jan., 1857; Dublin Medical Press, Feb. 18, 1857.)

"In 1841," says Dr. Magenot, "I was brought to see a little girl affected with a congenital cutaneous nævus, which had disappeared under the influence of frictions with nitrate of potash, recommended by a person unconnected with medicine. Curious to verify for myself this curative effect of the topical action of this salt, I did not hesitate, the treatment being inoffensive, to make the attempt upon my own child, who had a similar lesion. This tumor, situated at the right commissure of the lips, presented at birth only the volume of a grain of hemp-seed, but it had developed itself by degrees, and presented, at the moment when I undertook the trial, the volume, form, and color of a raspberry.

"The following is the mode by which I went about it: During the sleep of the child, the mother, after having moistened her fingers, plunged it into the powder of nitrate of potash, then rubbed the tumor rather lightly, in order not to awaken her child. Under the influence of this friction there formed a small bulla, resembling in every point that of *herpes labialis*, under which the tumor had collapsed. After the fall of the escharified epidermis, the skin, from the deep red it was previously, had assumed a rose tint; but as there still remained a few small vessels on the surface of the cicatrix, and as besides the edges of the tumor were prominent, I repeated the frictions. At the end of eight days there remained nothing more than a cicatrix, which has gradually become effaced. To-day it is scarcely visible.

"The same results have been obtained in four other new-born children having nævi occupying the face.

"Lastly, in a child, aged twelve, the tumor, of four *centimetres* in diameter, occupied the shoulder, and the friction of the chemise caused a sanguineous oozing, which made the parents uneasy. Notwithstanding their fears they would not hear of an operation. After two months' frictions practised with the nitrate in powder, there remained only a cicatrix presenting a slight depression of the cutaneous tissue."

(C) CONCERNING WOUNDS AND ULCERS.

ART. 88.—*On the Ligature of Arteries in Suppurating Wounds.*

By M. NÉLATON.

(Gazette des Hôpitaux, No. 1, 1857; and Med.-Chir. Rev., April, 1857.)

In one of his recent clinical lectures, M. Nélaton made the following observations, the occasion being a secondary hemorrhage in the palm of the hand. Nothing is more difficult, he observed, than to arrest a hemorrhage of the hand, especially when this is consecutive—that is, when the wound is covered by pyogenic granulations. If not previously instructed as to the proper management of these secondary hemorrhages, you will be extremely embarrassed. The blood flows, you employ compression, and it ceases; but the hemorrhage will not be long before it returns, and will then be uninfluenced by compression. If compression be made above the wound, œdema takes place in all the subjacent parts, and the hemorrhage soon returns. The radial, or the ulnar, or the brachial may be tried, and yet the bleeding does not stop. Meeting such a case, M. Nélaton formerly was quite at a loss what to do, impressed as he was with Dupuytren's *dictum*, that arteries in a suppurating wound will not bear the ligature, the premature fall of this infallibly giving rise to a return of the hemorrhage. Nevertheless he ventured to tie the two ends

of the bleeding vessel of the palmar arch; and although the ligature fell sooner than usual, no hemorrhage followed. He has frequently since then tied vessels under analogous circumstances, and has never seen hemorrhage as a result of the fall of the ligature. Although, therefore, this fall takes place earlier (usually about the third or fourth day) than is the case with a ligature applied to a healthy artery, it is not premature, for bleeding does not follow. Examining the matter experimentally upon the dead body, M. Nélaton has found that ligatures applied to arteries in a state of suppuration (as in patients who have died after amputation), produce identically the same effects upon the coats of these vessels as upon arteries remote from the seat of inflammation; the same division of the inner coats and preservation of the outer taking place in the two cases. He feels, therefore, perfect confidence in the soundness of the practice, supported as it is by numerous cases that have occurred to him, both in private and hospital practice.

(D) CONCERNING DISEASES OF BLOOD-VESSELS.

ART. 89.—*On the treatment of Varicose Veins by the application of Caustic Issues.*

By HOLMES COOTE, F.R.C.S., Assistant-Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, March 14, 1857.)

Mr. Coote's object in the present paper is not to offer any new suggestions, but merely to point out a few facts which have not, in his opinion, received sufficient consideration in the pathology and treatment of varicose veins. When, after death, the integument of the lower extremity is reflected from the limb so affected, the subcutaneous veins are found, as usually described, dilated and tortuous, often sacculated, and with thickened walls; the diseased vessels may spread wholly or partially round the limb, and will very frequently be found to consist of many layers extending much more deeply than first appears. This is more especially the case from the knee downwards; and the author does not hesitate to affirm, that in very many apparently simple cases, a careful dissection would expose an amount of disease sufficient to astonish one who had never before adopted this method of investigation. As the subcutaneous fat is removed, layer after layer of veins is exposed, the whole forming a close network of tubes closely communicating with one another. If two, three, or more tubes were obliterated, the blood might still find ready channels for gravitation or circulation, and smaller veins would rapidly enlarge, to compensate for any temporary obstruction.

On these grounds Mr. Coote considers the practice of obliterating the large venous trunks by an operation now commonly recommended—namely, by compressing the vessel at various points, by passing a harelip-pin underneath it, laying a piece of wax bougie upon it, and then applying the twisted suture around the pin and over the bougie—as likely to prove insufficient; for by no means can the operator be sure that he had satisfactorily cut off all channels of communication. The method by which such an operation must act, to prove successful, would be by exciting inflammation of subacute character throughout the veins in the neighborhood, thus leading to their obliteration. This end is attained far more safely and satisfactorily by the application of caustic issues, a practice which has been strongly insisted on by Mr. Skey for very many years. So far back as 1842, Mr. Coote saw a female domestic, of forty-two years of age, in whom the veins of the right lower extremity were enlarged and tortuous from the foot up to the popliteal space, where they formed a tumor, situated towards the inner side of the limb, considerably larger than a man's closed fist. The patient complained of numbness and want of power in the affected limb, and of inability to go up and down stairs. Five caustic issues were put over the mass of distended veins about the knee, where they produced the usual effects; namely, some inflammation of the integument, easily controlled by simple measures; gradual thickening and hardening of the dilated veins, coagulation of the contained blood, and, finally, the obliteration of the circulation in the diseased parts. Ultimately the swelling subsided, and at the expiration of six months the patient was, in her own words, perfectly recovered.

But this end is not obtained by making necessarily a series of *deep* eschars; on the contrary, the eschars may be very small and very superficial, and it is by attending to this rule that danger of any unpleasant complication is avoided. Mr. Coote

has had of late a very considerable number of cases, both male and female, under his care in St. Bartholomew's Hospital, and in no instance has any unpleasant symptom manifested itself. He uses the powder usually recommended, namely, three parts of quicklime, and two of caustic potash, made into a paste with spirits of wine at the time of its application. Great care should be taken that the materials are good and pure. A thin layer is laid upon the part to be cauterized, the size of the issue being determined by a hole cut into adhesive plaster, which is applied to the skin. This hole need not be larger than a split pea or a fourpenny-piece, for it is found that the action of the caustic is always greater and more extensive than first appears. In from ten to twenty minutes, according to the purity of the materials employed, the pain which the patient experiences gives indication that the caustic has done its work. Upon the removal of the paste there is exposed a small ash-colored slough, which becomes hard and black by exposure to the air. In four or five days the eschar begins to separate by a process of ulceration, which goes on for a considerable and variable time, making the issue very much larger than the surgeon contemplated. It may attain the size of a shilling, when it heals, generally very slowly, in the usual way by granulation and cicatrization. The effect of the issue is to cause the mass of veins in its vicinity to become permanently obliterated; while the eschar is separating, the hardening of the veins is felt more and more, the vessels, whose walls are still soft and elastic, collapse, and the limb resumes its natural color and form. The issues must not be applied too closely one to another, for the subsidence of swelling causes the skin to contract, and the open spots upon which the caustic has acted become greatly approximated. Were they to ulcerate into one, a troublesome little sore might result, and no good end would be obtained from the infliction of a greater amount of cauterization than necessary.

The author has never seen any evil result, but Mr. Lloyd informs him that he witnessed one case in which the vein was opened by ulceration, and a severe attack of hemorrhage, followed by phlebitis, ensued. The only troublesome consequences which have resulted in the cases under his care have been, considerable inflammation in the skin about the issue, followed by a sort of erysipelatous redness, and some temporary swelling of the glands in the groin; a painful state of the issue, accompanied by ulceration of the subjacent parts; a tedious process of cicatrization. But perhaps the slower the progress of the issue, the more complete the obliteration of the veins, and the more perfect the cure. Some judgment is required in the selection of spots for the issues. As a general rule, the patients require good food, and, not uncommonly, some tonic medicine, such as cinchona or quinine.

(E) CONCERNING DISEASES OF THE BONES AND JOINTS.

ART. 90.—*On forcible extension and rupture of the uniting medium of partially ankylosed surfaces.* By Mr. BRODBURST, Assistant-Surgeon to the Royal Orthopædic Hospital.

(*Medical Times and Gazette*, April 4, 1857.)

Mr. Brodburst commences this paper (which was read before the Royal Medical and Chirurgical Society on the 24th of March, 1857) by stating that excision of the articular surfaces of bones is at the present time an operation of frequent occurrence, and that it is undertaken not as a substitute merely for amputation, but that this operation is performed in cases where amputation would not be thought of, and where forcible rupture of partially ankylosed surfaces would be advantageously had recourse to. He relates three cases of partial ankylosis of the knee, in which the adhesions were ruptured, and motion was restored. He also cites three similar cases in which the articular extremities of the bones were excised, and relates four cases of partial ankylosis of the hip, and one case of partial ankylosis of the elbow; in all of which, rupture of the uniting membrane was successfully performed. The author then gives a brief historical sketch of the operation, to show the means which have been hitherto adopted in the treatment of these cases, and to contrast them with those which he has practised and which he recommends; and concludes with some details as to the after-treatment adopted by himself. The cases related were—

1. A youth, aged fourteen, with partial ankylosis of the knee at a right angle, together with subluxation of the tibia backwards, of nine years' duration.
2. A female, aged forty-two, with angular false ankylosis of the knee, together with subluxation of the tibia backwards, of ten years' duration.
3. A female, aged seventeen, with angular false ankylosis of the knee, which had existed one year.
4. A female, aged eight, with angular false ankylosis of the hip-joint, of three years' duration.
5. A female, aged thirteen, with false ankylosis of the hip, of four months' duration.
6. An artillery officer, aged twenty-five, with false ankylosis of the hip-joint, of fourteen months' duration.
7. A gentleman, aged twenty-one, with partial ankylosis of the hip-joint, of twelve years' duration.
8. A boy, aged eight, with angular false ankylosis of the right elbow, of five years' duration.

The author states that in no instance did inflammation occur; and also that in all these cases motion was obtained. In some, complete power of motion in from six weeks to three months; in others, less extended motion. He concludes that fibrous adhesions may safely be ruptured when they have formed between articular surfaces. And he recommends that when muscular retraction exists and there is much rigidity present, the tendons should first be divided, and subsequently the adhesions should be ruptured, when the punctures have healed.

(F) CONCERNING ANÆSTHETICS.

ART. 91.—*On some remote effects of Anæsthetics upon the system.*

By Dr. FRED. D. LENTE.

(*New York Journal of Medicine*, Nov., 1856.)

Dr. Lente records the three following cases in which anæsthetics appear to have been productive of serious ill consequences:

CASE 1.—In the summer of 1853, assisted by Dr. Leroy, formerly resident surgeon of the New York Hospital, I operated on a boy in apparent good health, eight years old, for contraction of the index and middle fingers of the right hand, the result of the cicatrization of a bone some years previously. As the case required a careful and somewhat protracted dissection of flaps into the palm of the hand, the patient was subjected to the influence of sulphuric ether, administered by Dr. Leroy, on a sponge in the usual way. Nothing remarkable occurred either during the administration of the anæsthetic or during the operation, and but a moderate quantity of blood was lost. The patient soon recovered consciousness, but in a short time he became very feeble, and soon commenced vomiting, although no food had been allowed for seven hours previous to the operation. The pulse commenced sinking rapidly, consciousness being unimpaired. Frictions were at once resorted to, and stimulants attempted, but were immediately rejected by the stomach. The prostration soon became extreme, and dissolution appeared imminent both to Dr. Leroy and myself. Brandy was freely administered by enema, and retained, and, in the course of an hour or two, reaction slowly commenced, but it was not until several hours had elapsed that it was considered safe to dress the wounds, so slowly did the patient recover from prostration.

CASE 2.—This patient, a young man in ordinary health, not robust, aged about twenty-five, of nervous temperament, wished to have a large number of decayed teeth and fangs of teeth removed. At the request of the dentist who was to operate, I administered sulphuric ether, patient sitting upright in the operating chair, a necessary position during such an operation. The patient had previously been considerably frightened both at the idea of the operation, and of the anæsthetic, although unwilling to undergo the sufferings without it; he had accordingly primed himself pretty thoroughly with brandy, but was in nowise intoxicated. Nothing unusual occurred during the administration of the ether, and anæsthesia was induced without difficulty. Six stumps were rapidly and skilfully extracted, say within three minutes, perhaps within two. The patient then showed some signs of returning

consciousness, and more ether was administered; anæsthesia was soon re-established, and six more teeth were, with equal rapidity, extracted. The anæsthesia was very complete, but there was no unusual difficulty in recovering the patient, and he was soon able to walk home. A week or two after this, he applied to me, complaining of debility, pain about the head, and dizziness, a disposition to faint and fall down, and various nervous symptoms, which, he said, had troubled him ever since the operation. He was very low-spirited and fearful of some serious disease. He, of course, attributed all this to the ether. I endeavored to divert his mind from this idea, and prescribed change of air and tonics. He went away, but returned within a few weeks not much better. Subsequently he improved, and after a couple of months longer was much better, though still rather nervous and desponding. He afterwards went to the city to reside, and since that time I have not seen him.

CASE 3.—W. M.—, a young gentleman, about thirty years old, in robust health, of temperate habits, was attacked with ulceration of the soft parts of the mouth from pressure of a crowded wisdom tooth; the pain was very severe, causing loss of rest and food. I advised the extraction of the tooth, but the dentist to whom he applied merely cut away the overhanging edges of the ulcer; the inflammation increased and extended to such a degree as to produce almost complete closure of the jaws, with inability to open them. It was absolutely necessary now that the tooth should be extracted as the only means of arresting the inflammation, and it was therefore proposed to etherize the patient in order to allow the jaws to be forced open sufficiently to admit the introduction of a forceps. Sulphuric ether was accordingly administered; the patient came rapidly under its influence, scarcely requiring an ounce and a half, though not entirely unconscious; the jaw was forced open with but little difficulty, and the tooth rapidly extracted by the dentist in attendance. The patient soon recovered, but seemed a little nervous and considerably excited, but expressed himself as entirely relieved from the severe pain he had been suffering. He was advised to go home and lie down for a few hours. He walked home, about a quarter of a mile or more, and followed my advice; but in the afternoon complained that the ether was still in his lungs, and sought to get rid of it by riding and walking. In the evening he was at the house of a friend in gay society, and seemed to enjoy himself, still, however, occasionally complaining of some difficulty about his chest, when, all at once, he fell from his chair, exhibited great restlessness, tossing about of the arms and legs, with great difficulty of breathing, but no loss of consciousness, declaring all the time that he could not get his breath for the ether, and that he should die; his hands and feet were said to be cold. Before I reached him, various restoratives had been applied, and he had been almost drowned by the assiduous application of hot water. It was evident at once that it was a case of violent hysterics, unusually well marked in a male. Patient at times would laugh and joke, then express fears of impending suffocation, with jactitation, declaring that as vapor of ether was heavier than air, he ought to be held up and allow it to run out of his lungs. As he was rather weighty to allow of convenient inversion, his request was not granted. Large doses of morphine were administered, but had no effect; it was only after several hours that he could be quieted. The next day he was able to be up, but complained of weakness and a disposition to faint on the slightest attempt to walk, also of some difficulty of breathing. This continued for some days, but finally disappeared, and, within ten days, he was apparently in his usual condition. Patient had never previously exhibited any tendency to hysteria.

(G) CONCERNING OPERATIONS.

ART. 92.—*On the Flap and Circular Modes of Amputation.* By MR. HARGREAVE, Surgeon to the City of Dublin Hospital.

(*Dublin Medical Press*, April 29, 1857.)

"As to the flap amputation," says Mr. Hargreave, in a recent clinical lecture, "the chief advantage claimed for it by its advocates is the great celerity in performance. I believe that this is the only and sole benefit; the arteries are not more safely secured by it, neither is a better stump made by it. The results of this operation in the Crimean war I now quote from memory without having taken a

"The circular amputation, whenever I can adopt it, is the one I always perform, especially in operations on the thigh. As to what some attach so much value, namely, *time*, whether the patient is under the influence of chloroform or not, it makes but the difference of a *few seconds* if the proper practical principles are adopted, and now of less moment than ever, since this anæsthetic agent is of general use. Rapidity of operation need not therefore be considered of so much importance; the arteries are better secured; less risk incurred of any unattended nerve becoming united and implicated in the line of junction, giving rise to neuralgic symptoms; a firmer stump is made, and the bone better covered; and though the limb be full and fleshy, there is not so great a weight of soft parts to be supported by the dressings as in the flap amputations."

(*Medical Times and Gazette*, Sept. 13 and 20, 1856.)

	Cases.	Fatal.	Per cent.
Excisions of the upper extremity were, . . .	36	2	5·55
" " lower " " . . .	14	7	50·00
Miscellaneous,	4	0	—
	<hr/> 54	<hr/> 9	<hr/> 16·66

		Per cent.	Per cent.
Amputations were	60, fatal	19, or 31·66,	or 68·34 successful.
Excisions	" 12, "	2, " 16·66,	" 83·34 "

			Per cent.	Per cent.
Amputations were	153,	deaths 29, or	18.95,	successful 81.05
Excisions	" 17,	" 2, "	11.76,	" 88.24

giving a difference in favor of excisions of 7.19 per cent. Perhaps the most important class is that of operations on the hip-joint; for, while the ten cases of amputations all proved fatal, there were six cases of excisions of the head of the femur, of which one recovered, being a percentage of 16.66 in favor of the excisions. It is needless, on the present occasion, to carry this analysis any further; but, taking the three classes together, we find that of 223 important amputations, 58, or 26 per

cent. were fatal; and of 35 excisions, 8, or 22·85 per cent., were fatal. On the whole, that the percentage is still in favor of the excisions. It perhaps might be as well to mention what might have been the excisions performed out here.

Of the upper extremity, there were of the

	Case.	Per cent.
Shoulder-joint,	12 . . . 2	or 16·66 proved fatal.
Elbow,	17 . . . 2	" 11·77 "
Head of radius,	1 . . . 0	" — "
Ends of radius and ulna,	1 . . . 0	" — "
Part of ulna,	1 . . . 0	" — "
Part of humerus,	1 . . . 0	" — "
Part of carpus and metacarpus,	2 . . . 1	" — "
Internal condyle of humerus,	1 . . . 0	" — "

36

Of the lower extremity, there were of the

Head of the femur,	6	5 fatal.
Part of the femur,	2	" "
Knee-joint,	1	1 "
Os calcis,	4	0 "
Lower end of fibula,	1	— "
	14	18

ART. 94.—On the use of Perchloride of Iron as a hæmostatic during operations.

By M. MAISONNEUVE.

(*Mon. des Hopitaux*, No. 24, 1856.)

A correspondent of this journal states that one of the principal elements of success in the difficult and dangerous operations M. Maisonneuve is famous for undertaking, is the remarkable use he makes of hæmostatics during their performance. He cites a recent case, occurring in a lad of sixteen, of fungous tumor of the dura mater, the growth of which, after having been temporarily arrested by ligature of the carotid, increased very rapidly, and was accompanied by exhausting hemorrhages. M. Maisonneuve determined upon its removal, but the tumor bled on the slightest contact, and the patient would not be able to bear the slightest loss of blood. The line of incision extended from the anterior parts of the ear to the summit of the head, and descending along the nose, was carried backwards, and then upwards to the base of the jaw, and its point of departure. A great number of arteries were thus divided, five or six of which, by reason of their anastomotic enlargement, had acquired almost the size of the radial artery. Intelligent assistants immediately compressed them with the finger, but it was impossible to thus continue the dissection without exposing the patient to the danger of death from syncope. M. Maisonneuve therefore applied to each vessel a little pledget of charpie, soaked in perchloride of iron, which was allowed to attach itself to the wound. At every stroke of the bistoury or scissors he applied a new plug, so that during the operation the patient scarcely lost a spoonful of blood; and when the tumor had been entirely removed, the entire surface of the wound was found completely dried and tanned, and was at once dressed, without the necessity of the application of a single ligature. The brown eschar which covered the wound was detached about the twentieth day, without giving rise to any hemorrhage; and although the cure can scarcely be expected to prove radical, the patient for the present is perfectly well.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 95.—On the local treatment of Granular Conjunctiva. By Dr. C. S. FENNER, of Memphis, Tennessee.

(*North American Medico-Chirurgical Review*, Jan. 1857.)

Dr. Fenner describes four varieties of granular conjunctiva:

1st. The everted lid has a villous appearance; the natural papillæ of the membrane are elongated, without much enlargement; they are very red, and evenly spread over the whole mucous surface. This form of the disease is attended with considerable redness of the ocular conjunctiva, lachrymation, and increased sensibility to light, but is not liable to frequent recurrences of acute inflammation.

2d. The inner surface of the lid appears as if spread over with bruised muscular fibre, is highly engorged with blood, and bleeds on the slightest touch. The fold of conjunctiva extending from the lower lid to the eye is much swollen, and engorged with dark venous blood, and, if the lid be depressed, rises up so as to touch or overlap the edge of the cornea. The caruncula lachrymalis is also swollen; and there is enlargement of the Meibomian follicles, with increased secretion. This form of the disease is subject to frequent and violent exacerbations, beginning with a stinging pain, usually at the external canthus; increased redness of the eye; swelling of the lids; severe supra-orbital pain; and other symptoms of acute conjunctivitis.

3d. The conjunctiva is converted into wart-like excrescences of various sizes, with deep sulci running between them.

4th. The lining membrane of the lid is thickened, and presents something of a cartilaginous appearance. The membrane is contracted, rendering it difficult to evert the lid, and when turned, the blood is forced out, so that the part appears white and glistening. The lids do not open as wide as usual, causing the eye to appear smaller than natural. This condition is more frequently found in middle and advanced age, and is attended with considerable opacity of the cornea and dimness of vision, but is less liable to relapses than the second and third varieties.

About the local treatment he says—

"There has been, and is yet, a great variety of opinion among surgeons in regard to the proper local treatment of granular conjunctiva, and a great many stimulating, caustic, and astringent applications have been recommended, most of which I have found absolutely injurious. The only articles I now use locally are a saturated solution of the acetate of lead, the undiluted liquor plumbi diacetatis, the sulphate of copper, and occasionally the knife. In the fourth variety I have described, where the lining membrane is contracted, white when everted, and having the appearance of cartilage, I have found the saturated solution of the acetate of lead brushed over the diseased surface every morning restore the parts in a very few weeks. The solution should be applied for two or three minutes, with a camel's hair pencil. This remedy answers better than any other in simple swelling of the conjunctiva remaining after the first attack of purulent ophthalmia, when the inflammation of the eye has subsided, and before repeated exacerbations have changed the structure of the membrane. In the other varieties, I have found it of service alternated with sulphate of copper. When the granules are loose and spongy, a few applications of the acetate of lead will contract and harden them, after which its efficacy seems to cease, when the sulphate of copper will be more beneficial. The lead should be applied until the part becomes of a milky whiteness, caused by the coagulation of the albumen of the blood, after which a stream of warm water from a sponge should be passed over the lid, before it is permitted to fall back to its place. If, on the next day, the whiteness has nearly disappeared, the same application should be repeated. Sometimes the whiteness remains for several days without any perceptible change, when the remedy will generally be found to irritate the eye, and not adapted to the case. I have seen the lead continued until there seemed to be a white deposit on the diseased surface, beneath which the parts were extremely sensitive, and inclined to bleed upon the slightest irritation.

"In the first three varieties of the disease, more benefit will result from the local application of the sulphate of copper than from any other remedy, and I believe that this article, occasionally alternated with the solution of the acetate of lead, will accomplish all that can be desired. A firm, well-crystallized piece of the salt should be selected, cut to a wedge-shape, and fastened in a quill. The lid should be everted, and the mucus wiped away with a soft sponge; the end of the copper should be dipped in water, and rubbed over the entire diseased surface until it becomes of a dirty white or greenish color, when a stream of water should be allowed to flow over the surface, before the lid resumes its natural position. This is to be

repeated every morning. It causes considerable pain and redness of the eye, which soon passes away, and the relief is so marked that the patient soon learns to prefer this application to any other. Under this treatment the spongy granulations contract, harden, become flattened on the surface, the fissures gradually disappear, until the whole surface is nearly smooth, although the membrane remains thickened. At this stage patients are so much relieved that they often consider themselves well, and dislike to submit to further treatment, particularly if they are at a distance from home, or think they can continue the applications with the assistance of a friend. The first point of healthy conjunctiva is seen at the edge of the tarsus, in the centre of the lid; a few bloodvessels will be discovered running from the edge and lost in the diseased membrane. These vessels become shorter on either side of the centre of the lid, until they disappear. Gradually the arteries extend, until the whole surface assumes a healthy appearance, the temporal and nasal portions being the last to yield. The healthy conjunctiva seems to extend from the edge of the tarsus, in the same manner that the skin spreads over a denuded surface.

"I was formerly in the habit of using the knife freely in the beginning of the treatment, shaving off the fleshy growth, but I found no benefit from that course—a diseased surface still remaining, from which the granulations sprung as freely as before—and for a long time I entirely abandoned its use; but I have subsequently found it beneficial, after the sulphate of copper has been used until the granulations are hardened and contracted; then shaving off the surface of some of the most prominent near the edge of the tarsus, and immediately applying the copper, I have found to hasten the cure. Nitrate of silver, either in solution or substance, which has been so much lauded as an application to granular conjunctiva, has in my hands proved injurious, causing swelling of the lids, inflammation, and not unfrequently ulceration of the cornea. It does not produce the kind of action necessary, which should be actively stimulating and astringent, to produce contraction and absorption of the granules, rather than their destruction by caustic substances. During the exacerbations I have found the solution of the nitrate of silver, of the strength of from twenty to thirty grains to the ounce of water, more efficacious than any other remedy, when applied with a brush to the engorged fold of conjunctiva extending from the lower lid to the eye.

"I have tried the iodide of zinc, as recommended by Dr. Hays, but the result has not proved satisfactory. A solution of common salt is sometimes of service in mild cases, and makes a very good occasional wash for the eye during the day, to remove any slight roughness or smarting, and to clear the cornea of a thin stratum of mucus, that accumulates on its surface. Active escharotics, according to my experience, should never be employed; they leave an abnormal surface, from which the disease is rapidly reproduced. They prevent the parts from ever assuming a healthy state, and the inflammatory action they induce rarely fails to injure the eye. Mr. Lawrence remarks—'After the use of escharotics, the conjunctiva does not regain its normal state; it exhibits traces of the former affection, which, however, do not interfere with its function. It is thicker and has a leathery appearance, with a darker red color than in the natural state, and sometimes we observe whitish cicatrices.' Walther's remarks in reference to the escharotic plan of treatment are highly appropriate. He says—'The benefit derived from them is, on the whole, inconsiderable; even when methodically and cautiously employed, they either do not effect a complete cure, or bring it about very slowly. . . . Most of them are so strong, that the eye, even in its relaxed state, will not bear them without experiencing inflammatory reaction. . . . I am indeed astonished when I see one of the most delicate organs attacked with a series of applications so powerful and destructive, from corrosive sublimate to arsenic. The number of these local remedies is calculated to excite distrust. When a disease can be easily and safely cured, the remedies are few, simple, and recommended by reason and experience. They become multiplied in proportion to the obstinacy and tediousness of the complaint.' Counter-irritation by means of a seton or blister to the back of the neck will be found serviceable, and the frequent bathing of the eye during the day in warm water will give much relief. The above plan of treatment regularly and systematically pursued will rarely fail to bring about a perfectly healthy condition of the

palpebral conjunctiva, and a complete restoration of vision, where the eye has not been injured beyond the power of reparation."

ART. 96.—*On the use of Perchloride of Iron in Panniform Keratitis.*

By M. FOLLIN.

(*Archiv. Gén. de Méd.*, June, 1856.)

The medical profession of Lyons, to whom we are in some measure indebted for the introduction of the use of the perchloride of iron as a therapeutical agent, are much interested just now in its application to the treatment of panniform keratitis. This disease is one of great severity, on account of its tenacity, its relapses, and its incessant aggravations, and finally on account of the impairment or total loss of sight to which it leads. Among the numerous methods which surgeons have employed in its treatment, cauterization and annular division of the vessels supplying the new growth, have doubtless produced successful results; but their efficacy is not such as to leave nothing more to be desired. Their employment is not always easy, and, in the case of infants, oftentimes impossible.

To destroy the very minute vessels running from the surrounding conjunctiva to the surface of the cornea being the principal indication, M. Follin conceived the idea that this might be accomplished by means of the perchloride of iron. This powerful astringent arrested the abnormal circulation by coagulating the blood in the small vessels, which, consequently, being no longer required, were absorbed, and the cornea regained its transparency. Such are the results obtained by MM. Follin, Broca, and Gosselin, in several cases reported.

M. Follin makes use of the perchloride of iron in a perfectly neutral state, at 30° (Beaumé). A single large drop is introduced into the eye by means of a quill. The first effect is a burning pain and a sensation of powerful constriction, which gradually diminish in the course of a quarter of an hour. The heat is, however, more supportable than that produced by many other agents in use, the sulphate of copper for example. If the eye should continue injected and phlogosed, cold applications and gentle astringents should be resorted to; among which latter M. Follin prefers a decoction of rhatany. The perchloride is not repeated for two or three days, and marked amelioration is generally observed after the third or fourth application; the vascularity of the cornea is already diminished, the photophobia has nearly disappeared, and the sight made clear. It is rarely necessary, in order to produce a complete cure, to repeat the remedy oftener than ten or twelve times, frequently four or five applications are sufficient.

The presence of superficial ulcers on the cornea does not contraindicate the employment of the remedy.

ART. 97.—*On the inutility of Depletion in Syphilitic Iritis.*

By Mr. HAMILTON, Surgeon to the Richmond Hospital.

(*Dublin Hospital Gazette*, Nov. 1, and Dec. 8, 1856.)

In the treatment of syphilitic iritis, most authors recommend active depletion either by leeches, cupping, or bleeding from the arm, according to the severity of the inflammation, and repeated according to the obstinacy of the disease. Mr. Mackenzie, in his excellent treatise, speaking of the treatment of iritis in general, has the following remarks: "Bloodletting must in no case be neglected, and when the patient is robust and the inflammation severe, must be vigorously employed. Local bleeding is by no means adequate to remove iritis even of moderate severity. General bleeding must be premised and repeated till the constitutional irritation is abated. In no disease of the eye is venesection so remarkable for its sudden effects, as in iritis. The patient who could not previously discern the face of a person standing before him except as a mere mass, will often exclaim, on opening the eye after venesection, that he sees clearly. *I have observed this especially in syphilitic iritis.* The blood taken from the arm is very buffy, especially when the disease is rheumatic or syphilitic. Cupping is not to be trusted as a substitute for venesection. It is comparatively of no effect. After venesection, leeches may be applied freely round the eye, and repeated every day or every second day till the inflammation is subdued." A few pages after, in treating of syphilitic iritis separately, he

quotes the authority of Dr. Monteath, still further in support of "full bleeding from the arm."

"Now," says Mr. Hamilton, in a recent clinical lecture, "*I am sure, that depletion is unnecessary for the cure of syphilitic iritis. I have for many years past treated a large number of cases without taking away a drop of blood, and cured them as rapidly and effectually as could be wished. The treatment has consisted in the administration of mercury to decided salivation, and the application of the extract of belladonna round the orbit. Let me produce a few instances of the success of this mode of treatment, in cases offering the acute form of the disease.*"

CASE.—Iritis cured without depletion. Case taken by Mr. Frazer.—Esther D—, æt. 26, admitted 24th March, 1846, to No. 13 Ward of the Richmond Hospital, with syphilitic iritis of the right eye; the conjunctiva and sclerotica are intensely vascular, the pupil contracted, slightly irregular, the iris greenish, though naturally gray. The aqueous humor hazy. She has pain in the eyeball and brow, keeping her awake at night. Vision indistinct and clouded, a constant flow of tears over the cheek, and intolerance of light. Three weeks ago perceived the eye to be bloodshot, in six or seven days the lids became swollen, the secretion of tears increased, and the sight got dim. She has a marked eruption on the chest and slightly over the back and arms, and wandering pains in the bones with periostitis over the tips of the shoulders. The countenance is sallow and miserable, and she is a picture of wretchedness and suffering.

25th.—Mr. Hamilton ordered five grains of Hyd. c. Creta three times a day, and the extract of belladonna to be applied round the eye at bedtime.

Her mouth was affected by five pills, with marked relief of all her symptoms. To take one pill at bedtime. On the 28th they were omitted, after she had taken seven, as they produced griping.

April 2d.—Tunics of the eye still vascular, but the aqueous humor is clear and the iris natural in color, and dilating from the effect of the belladonna.

7th.—Pupil perfectly circular.

21st.—She was kept under the influence of mercury till to-day. A pint of infusion of sarsaparilla with fifteen grains of hydriodate of potash daily.

May 4th.—Discharged, having regained her natural color, flesh, and spirits.

CASE.—Iritis cured without depletion. Case taken by Mr. Frazer.—James S—, æt. 24, an attorney's clerk, a hard drinker, of broken-down constitution, and suffering from recent excesses, was admitted 16th January, 1846, into No. 9 Ward of the Richmond Hospital, with syphilitic iritis of the right eye, a marked eruption of brownish spots sparingly scattered over the body, a cartilaginous cicatrix of a chancre at the corona, and pains in the joints. The pains were those of gonorrhoeal rheumatism, of nearly two years' standing. The chancre was contracted four months since, and healed by a small quantity of mercury in six weeks, leaving the hard cicatrix; he does not know when the eruption appeared, but the iritis began three weeks since, at first slowly, but rapidly got worse a few days before admission.

The right eye presents the appearance of the most severe inflammation, the conjunctiva and sclerotica deep red, the iris, naturally of a gray color, is greenish and dull, the pupil contracted, rather irregular, and the anterior chamber hazy. The upper eyelid is swollen and oedematous, there is little intolerance of light, but profuse lachrymation. There is dull pain in the ball of the eye, and he complains of the most severe pain in the right brow and temple, coming on in the evening and remaining during the greater part of the night.

Mr. Hamilton ordered him to get two grains of calomel and a quarter of a grain of opium, every four hours, and the extract of belladonna to be smeared round the eye a little before the time of the commencement of the pain.

19th.—Mouth slightly affected. The inflammation of the eye less.

21st.—Fully under the influence of mercury; the iris is recovering its natural color, and for the first time is affected by the belladonna, the pupil being slightly dilated. The nocturnal pain is much diminished.

24th.—Vascularity very slight, and the pupil dilates regularly. The humors clearing, and he has only a dull pain in the forehead at night.

26th.—The eye perfectly well. He was kept under the influence of mercury for

a few days longer, and afterwards given the hydriodate of potash with infusion of sarsaparilla, and left the hospital on the 17th, considerably improved in flesh and appearance.

"I was originally led to reject depletion," says Mr. Hamilton, "when patients, laboring under syphilitic iritis, presented themselves in the same wretched depressed condition as this man and woman, and with such a bloodless aspect, that they were obviously no subjects for taking from them what they so evidently wanted—a proper supply of healthy vivifying fluid. With the old prejudices in favor of depletion in inflammatory diseases, it required some courage to resist applying leeches or cupping-glasses, when the eye was so intensely inflamed; and I watched the daily progress of the diseased action with no little anxiety. Observing this to be so favorable, that directly the mercury affected the mouth and the system, the inflammation subsided, the iris resumed its bright, healthy aspect, and unclogged of the lymph which deposited in its structure had stopped its motions, the pupil expanded to the action of belladonna, I applied the same treatment to other cases, and finally rejected depletion altogether in syphilitic iritis. The line of treatment is sufficiently detailed in these cases to render any further remarks as to the form or mode of administering mercury unnecessary. Two grains of calomel, and one-fourth, or one-eighth, of a grain of opium, three times a day, till full salivation, in subacute cases; and in the acute form of the disease, or in that which suddenly becomes acute, the same quantity every third hour. Where there are other symptoms, eruptions, &c., the mercurial action should be kept up for eight or ten weeks, till the poison is fully worked out of the system.

"It will be frequently observed that during the time the patient is taking mercury, before salivation is induced, the disease advances, the iris becomes more dull and thicker, and the pupil more hazy; in short, that the unchecked inflammation is exhibiting its ravages on the structures of the eye. It might be considered a time for depletion, but it is not; though the application of a cupping-glass to the temple, or a full bleeding from the arm, will pale the red and inflamed eye for a time, by unloading the vessels, and the patient see, perhaps, more clearly, the amendment is short-lived; the specific diseased action is there still, and soon resumes its work of destruction, which is only effectually checked by mercury. Directly the mouth is affected, the improvement begins, and persists.

"Relapses in syphilitic iritis are, it is well known, common, even after the iritis is apparently quite well. Sometimes only a little pale pink zone round the corner marks a tendency to return of the disease, with some contraction of the pupil; at others, the relapse consists in a full return of the disease as bad as ever, contracted, irregular pupil, dull, discolored iris, loss of sight, and intense vascularity of both conjunctiva and sclerótica. The patient is, probably, under the influence of mercury at the time; he must be kept so, and the quantity rather increased, to produce a more decided action on the gums."

ART. 98.—*On Sympathetic Inflammation of the Eyeball.* By MR. HAYNES WALTON, Surgeon to the City of London Ophthalmic Hospital.

(*British Medical Journal*, April 11, 1857)

We suspect that the instances are very few in which the practice of surgery has received any advancement from the exercise of the curative art in brutes; and, of all, we should expect less to be gathered from diseases of the eye, because but few are recognized, and because, for the most part, of the rude and unscientific and often barbarous treatment. But, strange to tell, the horse-doctor has been in advance of the accomplished ophthalmologist, as we shall show. The modern student, whose reading, we fear, is too much confined to the hard, condensed manuals of the present day, is not aware that Mr. Wardrop, yet among the living, contributed a very great deal to the improvement of the art and science of surgery, and not less to the ophthalmic department. So long ago as 1819, he told the profession, in his valuable work "*On the Morbid Anatomy of the Human Eye*" (a wonderful production in its time), that in a certain ophthalmic disease of the horse, farriers were in the habit of destroying the eye by suppuration, knowing well that the other eye, which is in great peril, could be saved by this means; they having been led to the adoption of the method from observing, that if the eye primarily attacked suppu-

rated naturally, the other was spared invasion of the disease, or, if suffering, was yet rescued. More than this, that he had many times saved the second eye by adopting this practice, not as the professors of the veterinary art, by putting quicklime into the eye, or thrusting a nail in it, but by the more artistic method of cutting across the cornea and evacuating the humors. Then follows this sentence: "In some diseases of the human eye, where the disease makes a similar progress, first affecting one eye, and then the other, with complete blindness, the practice so successful in animals might, by judicious discrimination, be beneficially adopted."

ART. 99.—On the Operation for Cataract in Gouty Persons. By Mr. WHITE COOPER, Surgeon-Oculist to St. Mary's Hospital.

(*Lancet*, April 11, 1857.)

"The operation of extraction," says Mr. Cooper in a recent clinical lecture, "is by some writers thought inadmissible for gouty persons. Some years ago, whilst under this impression, I depressed a cataract in the left eye of a gentleman so crippled with gout that he walked with much difficulty. He was a large, heavy man, and I had misgivings after the operation, that the lens might be displaced by his jarring movements. It was so; subacute inflammation followed, and the eye was lost. With the right eye I determined to adopt a different course—namely, to perform extraction. The time selected was immediately after a severe fit of the gout had passed away. Extraction was performed under chloroform, and so well did the patient progress that he frequently said that, so far as his own sensations were concerned, he should not have known that an operation had been performed. The wound united well, and on the tenth day after the operation this gentleman left town with restored sight. If, then, you are called upon to operate on a gouty person, do so, if possible, soon after an attack, and especially avoid that time when malaise, irritability of temper, and other well-known symptoms, point to an impending fit. There is, however, a class of persons in whom I contemplate an operation with great misgivings—I mean those afflicted with 'suppressed' or 'irregular' gout, where the diathesis exists, but the system is never relieved by a regular fit. Such patients require careful preparation for an operation on the eye, and it should only be performed when the weather is fine and mild, and the wind not east. Mr. Middlemore recommends a seton being placed in the arm of a gouty person a week before the operation, and the suggestion is not to be lost sight of."

ART. 100.—On Hemorrhage from the Eyeball. By Mr. WHITE COOPER, Ophthalmic-Surgeon to St. Mary's Hospital.

(*Lancet*, April 11, 1857.)

Two cases of this kind have occurred in Mr. Cooper's practice, and both in St. Mary's Hospital. Both occurred in old women—one of them a great sufferer from rheumatism. In answer to the question whether there are any means of diagnosing the hemorrhagic cases before operation, Mr. Cooper says, "You will do well to regard with suspicion eyes presenting the following conditions:—Tense, hard globe, traversed by purple tortuous veins; sluggish or immovable iris; with perhaps one or two minute points of adhesion to the capsule of the lens; the existence of motes, flashes, and occasional dull aching at the back of the eye, with pains of the brow and cheek, the patient, at some time or another, having had gouty symptoms. You must bear in mind, however, that the pain, the *muscæ*, and other symptoms of disturbance, may have passed away, and will not be mentioned unless inquiry be made; yet their existence, in connection with the other symptoms, often indicates a varicose state of the choroid and of the retinal vessels, with perhaps degeneration of their coats.

"Dr. Gairdner has pointed out, that venous congestion is a common attendant on gout; my own observation coincides with this. A patient of mine, who lost his right eye from arthritic glaucoma, besides being a martyr to the gout in his limbs, underwent an operation on the throat; uncontrollable venous hemorrhage took place, and he died. A few weeks since, I removed an eye from a patient of Dr. Gairdner's; though the ball itself was cleanly dissected out by means of scissors and a strabismus-hook (a proceeding which is generally almost bloodless), there

was profuse hemorrhage at the time, and the bleeding did not cease for three hours, in spite of the constant application of ice; the patient, however, recovered so rapidly that an artificial eye was introduced on the seventh day, and borne perfectly well. I mention these cases, because I believe that when bleeding does take place from eyes which have been the seat of chronic arthritic inflammation, it is likely to be obstinate.

"What is to be done to check the bleeding?—Pounded ice to the lid, gentle pressure if it can be borne, and gallic acid internally, are the best measures. If the globe fills with blood, it will be utterly destroyed; but cases are recorded where the bleeding has been slight, and recovery of sight has taken place. It is, therefore, very important to check it promptly. If the patient be old and feeble, and the powers of life failing, stimulants—as brandy—may be absolutely necessary; but the less the better. The very depression of the circulation may be the means of arresting the hemorrhage, whereas a too hasty administration of stimuli to keep up the pulse, may be the very means of defeating the main object. The room should be kept cool, the patient be carefully watched and kept absolutely quiet—the fewer persons admitted the better: the alarm and agitation of friends are an annoyance to the surgeon, and are hurtful to the patient."

ART. 101.—*Source of the bleeding in operations upon disorganized Eyes.* By Mr. HAYNES WALTON, Surgeon to the City of London Ophthalmic Hospital.

(*British Med. Journal*, April 11, 1857.)

It is often asked, whence comes the bleeding in operations on disorganized eyes, and the usual answer is, from the central artery of the retina. But Mr. Walton thinks differently. He supposes it to arise from the diseased and distended vessels of the choroid, which give way directly that the pressure to which their coats are accustomed is removed. Such bleeding, he says, never takes place when a healthy eye is operated on, that is, when there is no disease beyond cataract; but it will frequently ensue when the eyeball exhibits evidence of disorganization, and always when distended. Moreover, in the latter cases, it is not requisite to cut away any portions of the sclerótica or of the cornea to cause it; simple evacuation of the liquefied vitreous body by a puncture may be followed by copious hemorrhage. We have heard him allude, in support of his theory, to severe bleeding after the extraction of cataracts from eyes, that plainly showed, from the discoloration and vascularity of the sclerótica, that there was general disease of the eyeball, cases in which the operation for extraction was inadmissible.

ART. 102.—*On the treatment of Strabismus.* By Mr. NORMAN.

(*Lancet*, Jan. 17, 1857.)

Having given a short sketch of the history of operation for strabismus as suggested by Stromeyer; of the zeal with which this practice was taken up in this country on its first introduction; of the great expectations that were formed of it, on the one hand, and the failures which were predicted on the other, and of which many undoubtedly happened,—the author contends that the latter were not such as to deter judicious surgeons from operating, but only to direct attention to their causes and their removal or avoidance. At first, nothing was known of the pathology of the affection, and not much had been added by actual demonstration of the state of the muscles of the eye. The operation rested upon a certain amount of analogy between strabismus and club-foot. The former, however, was almost always, if not always, a post-partum occurrence, and the consequence of disease; club-foot was produced in utero, and a result of imperfect development of the fetus. In strabismus the individual action of the muscles was perfect, the associated ones only were not; in club-foot the regular and proper movements and position of parts could not be, under any circumstances, effected by the muscles. In most cases of strabismus there was no paralysis; nevertheless it was necessary, before undertaking operation, to be assured of this, as also that the affection was permanent—not maintained by any existing disease of the head or other part, nor a natural remedy for an opacity of the cornea. The specific objections that might be urged against the operation were:

1. That it failed altogether.

2. It made matters worse, causing too great prominence, with eversion in internal, and inversion in external, squints.

3. Inflammation and suppuration of the wound.

4. The formation of sprouting granulations or excrescences.

5. Inflammation and suppuration of the globe.

Failure to effect a change was due to want of proper caution in selecting and rejecting cases, or to the non-division of the distorting muscle. The new displacements were due to dividing more than the offending muscle, and other like causes generally avoidable. The inflammatory sequelæ might be almost uniformly escaped by avoiding rude and unnecessary proceedings in operating. Subconjunctival division of the muscle would probably never be attended by any of these consequences except the first, namely, imperfect division of the muscle and failure. Many efforts had been made to bring operative procedures to perfection in these cases. It was an important point gained when it became clearly known that no good was to be gained by dividing the oblique muscles and other muscles and parts not concerned in the case. Subconjunctival sections, from M. Guérin's first suggestion to the present time, had not been productive of much good, chiefly from the difficulty found in adapting a knife to the work. This desideratum, it was hoped, would be supplied by Mr. Halthouse, who had bestowed much attention on the subject. Mr. Critchet's subconjunctival method is then described, in the language of the inventor's pamphlet on the subject; and Mr. Norman gives the histories of two cases, in which he has lately made trial of that method, with a success that had quite satisfied himself and the patients. The first of these was in a girl of fifteen, who had squinted nine years, and could not make out the letters of a large type *singly* without difficulty, and could positively not count two letters together; and, in addition to this, was unable to estimate the distance of objects correctly, so that, in placing things on a table, she was apt to let them fall to the ground. The operation resulted in a very great improvement of the person, so that in a fortnight no squint nor sign of operation remained, and the sight was much benefited, and is now perfect as in the other eye. The second was in a boy of eleven years, whose squint had existed eight years, and was attended with almost complete want of sight. In this case the operation was followed by great improvement of the person, and by a partial, but progressive, increase of visual power, although not to be compared with that of the former case. This method of operating (with scissors) was not liable to some of the objections existing to the other subconjunctival methods, but was decidedly more difficult than the ordinary operation. It was entitled to a full trial by those who have the opportunity, although, in the opinion of the author, the old method first practised by Lucas, Duffin, and others, taking care to avoid known errors, would be in most suitable cases a very successful and beneficial operation. These operations, now not much talked of, were all well deserving to be borne in mind.

ART. 103.—*On the operation for Strabismus.* By Dr. THOMAS GRAHAM.

(*North American Med-Chir. Review*, March, 1857.

"The essential principle of this operation," says Dr. Graham, in an able paper on strabismus, "consists in the division of the muscle subconjunctivally. This, it will be remarked, is not altogether a novel suggestion; it has been recommended by M. Guérin, and has been attempted with more or less success by several surgeons in England; but it has been found difficult, and sometimes impracticable in consequence of a defective method of procedure. Thus it is suggested to draw the eye forcibly outwards, so as to render the internal rectus tense; then to introduce a small bistoury beneath the muscle and divide it. Any one who has attempted the operation in this way, will agree with me that it is one of extreme difficulty; the loose capsule round the muscle prevents the edge of the knife from acting upon the tendon, nor can the latter be made sufficiently tense to be thus divided. The difficulty and uncertainty of this operation have resulted in its having been rarely attempted, more rarely accomplished, and *never repeated* by the same surgeon. The method that I propose, and that has been performed by myself and some of my medical friends in Sydney, Australia, in a large number of cases, is the following: Having placed the patient, if nervous or restless, or very young, under the influence of chloroform, the eyelids fixed open with a spring speculum, and the globe everted by an assistant seizing the conjunctiva near the outer margin of the cornea with a

pair of forceps, the operator pinches up the conjunctiva at a point corresponding to the lower border of the internal rectus, and makes a small opening with a pair of rather strong, blunt-pointed scissors. He then seizes the subconjunctival fascia, and divides it to the same extent, so as to clearly and cleanly expose a small surface of sclerotic. The ordinary strabismus blunt hook, bent at right angles, is now made to sweep round the globe, so as to pass beneath the muscle; this requires care, and a little practice is essential to success, and may be known to be accomplished by the peculiar elastic resistance that is felt: the blades of the scissors are next passed through the opening, and by a succession of small cuts, the tendon may be readily divided between the hook and the insertion into the sclerotic, and close to the latter; the clipping of the tendon may sometimes be recognized by the peculiar creaking sensation imparted to the scissors. Some little difficulty in making a complete division is experienced when the insertion of the tendon is rather broad, in which case, I am in the habit of making a small counter-opening in the conjunctiva corresponding to the upper border of the muscle, introducing the scissors from above, and having passed one blade beneath the remaining slip of tendon, dividing it in the same direction. This counter-opening has the advantage of facilitating the escape of blood that may have become infiltrated beneath the conjunctiva, and does not in any way interfere with the principle and aim of the operation, which is to leave a broad band of conjunctiva between the cornea and the inner caruncle intact. The advantages of this plan, as contrasted with the old one, seem to me to be very great. It has, in the first place, the merit possessed by all subcutaneous sections, of immunity from much subsequent inflammation and suppuration, and is, therefore, followed by a very rapid and certain cure; no granulations ever form, and the caruncle maintains its natural position, and does not shrink away into a deep fossa, as is invariably the case when the usual operation has been performed. I may also state that, as far as my experience yet goes, increased prominence of the eye is more rare, eversion never occurs, and the natural movements of the eye are more complete. This I attribute to the fact, that the ocular fascia is but little interfered with, and that a good firm union takes place between the divided muscle and the globe of the eye."

ART. 104.—*On the pathology of the Ear* By Mr. TOYNBEE, F.R.S.

(*A descriptive Catalogue of Preparations illustrative of the Diseases of the Ear in the Museum of Josh. Toynbee, F.R.S.*, London, 8vo, Churchill, 1857, pp. 128.)

Since the year 1839, Mr. Toynbee has examined no less than 1659 ears; namely, 272 diseased ears of deaf persons, the history of whose cases was known to him; 223 diseased ears of deaf persons, the history of whose cases was unknown to him; 654 diseased ears, to which no history was attached; and 510 healthy ears. And the results of this patient and most praiseworthy investigation are to be found in this catalogue.

The several results to which Mr. Toynbee has been led are—

1. The discovery of the existence of osseous tumors in the external meatus and their structure.
2. The detection of the presence of molluscos tumors in the external meatus; a disease which, in consequence of the accompanying discharge of mucus, has hitherto been confounded with "otorrhœa."
3. The abolition of the terms "otitis" and "otorrhœa," and the substitution of names indicating the tissue affected, and the peculiar nature of the affection.
4. The discovery of the existence of the dermoid layer of the membrana tympani, which plays so important a part in the diseases of that membrane. It was previously supposed that the epidermoid layer was in direct contact with the fibrous layers.
5. The ascertaining of the true relations of the two fibrous laminae of the membrana tympani, and the existence and offices of the "tubular tensor tympani ligament."
6. The construction and application of the artificial membrana tympani in cases of perforation or destruction of the natural membrane.
7. The demonstration that the functions of the ossicles are analogous to those of the iris of the eye, modifying the access of sonorous vibrations as the latter does the undulations of light, attuning the labyrinth for the reception of either loud and harsh, or very low and very delicate vibrations.

8. The establishment of the existence as a disease of membranous and osseous ankylosis of the stapes to the fenestra ovalis, one of the most common causes of deafness.

9. The proof that the Eustachian tube remains always closed, except during the momentary act of swallowing, when its muscles cause it to open.

10. The use of the "otoscope" as a means by which the condition of the Eustachian tube may always be diagnosed, without the use of the Eustachian catheter.

11. The various diseases which give rise to caries of the petrous bone, and implicate, in their progress, the dura mater, the cerebrum, and the cerebellum, have been described, their nature and extent indicated, and means for their amelioration suggested.

ART. 105.—On Bleeding from the Ear as the result of violence applied to the chin.
By M. A. MORVAN.

(*Archiv. Gén. de Méd.*, 1856.)

After a careful examination of several cases, M. Morvan arrives at the following conclusions :

Hemorrhage from the ear resulting from violence applied to the chin, may be or may not be accompanied by laceration of the membrana tympani.

According to the case, the injury will be either fracture of the glenoid cavity, or fracture of the petrous portion of the temporal bone, or both combined.

When there is hemorrhage from the ear without laceration of the membrana tympani, we may discard the idea of a broken petrous portion of the temporal bone; and the probability is, that the injury is only a fracture of the glenoid cavity.

When the glenoid cavity is fractured, besides the hemorrhage from the ear and the entire state of the membrana tympani, the articulation of the jaw is generally so sensitive, that deglutition and mastication are either extremely difficult or altogether impossible.

When the petrous portion of the temporal bone is broken, there is usually laceration of the membrana tympani, as well as hemorrhage from the passage.

If the glenoid cavity and the petrous portion are alike broken, there will be not only bleeding from the ear and laceration of the membrana tympani, but also difficulty of masticating and swallowing.

ART. 106.—A self-adjustable Artificial Tympanum.
By Mr. YEARSLEY.

(*Medical Times and Gazette*, Dec. 20, 1856.)

In this communication Mr. Yearsley describes a very simple method, in which the patient himself, however timid, may apply the cotton-wool substitute for the membrana tympani, which was first proposed in 1848.

"The invention," says Mr. Yearsley, "of which I have now to speak, consists of a silver tube of small calibre, from an inch and a half to two inches in length, and a small piece of cotton to which is attached a soft pliant thread, of two inches or a trifle more in length. The silver tube is provided with a hook at one extremity to entangle the cotton, if by any chance it should get disengaged, a circumstance not very likely to happen. The wood-cut represents the tube of the proper length, with the cotton well wetted, drawn through it, and the thread protruding at the hook extremity, all ready for use.

"*Directions.*—The thread is to be drawn through the tube, so as to bring the cotton steadily against its extremity, then having wetted the cotton in tepid water, introduce it into the passage of the ear, holding the tube and the thread at the same time with the finger and thumb, then move the cotton about at the bottom of the passage until it reaches a spot which, when touched, produces the improved hearing; this being attained, let go the thread, and gently withdraw the tube over it, leaving the cotton in the ear; finally cut off the projecting thread, or turn it into the outer cavity of the ear. Should the cotton fall from its proper position, and the improvement of hearing be lost, it may easily be readjusted by using the tube as a common probe, and with it, lifting the cotton into its place.



General observations.—For cleanliness' sake, the cotton should be changed daily, and unless the discharge be very profuse, it is better not to interfere with it before applying the cotton. One of the happy results of the continued use of this remedy is to *cure* the discharge of the ear. On this, if on no other account, cotton wool will always have the preference over other substances, in this peculiar mode of treating deafness. Its chief advantages over every other material may be thus enumerated :

"1. It is more easily applied. 2. It is simple, safe, and cleanly. 3. It retains its proper position longer. 4. It causes no irritation. 5. It produces no noise in the ear whilst eating or talking. 6. It is more agreeable to the feelings of the patient. 7. It produces the highest degree of hearing of which a patient with perforated *membrana tympani* is susceptible. 8. It cures the discharge of the ear which usually attends loss of the *membrana tympani*. This result is so uniform, that I have ceased for some years past to treat ordinary cases of *otorrhœa* by injections, preferring to relieve the patient of the discharge by the use of wet or dry cotton, more especially as the hearing is almost always benefited by this mode of cure, whereas the sense suffers by the application of astringent injections.

"In rare cases, owing to rough usage in the application of the wetted cotton, the ear becomes irritated and rebels, as it were, against its use, but beyond the tenderness which is felt by the patient, no other inconvenience arises, and never any injury to the ear ; while this stage of irritation lasts (generally two or three days), it is better to discontinue the cotton, and soothe the ear by fomentations and poultices. Strange to say, this irritation seldom or never recurs, and the ear ever afterwards quietly submits to the presence of the remedy.

"Three or four experiments will generally enlighten the patient as to the proper size of the cotton for his individual case. Success is generally made manifest to the patient by a click or pop, arising, as I believe, from the bursting of a small bladder of air formed by the discharge which is usually present. Sometimes it is necessary to lift up the cotton after it is introduced, which, as I said before, can be done with the silver tube used as a probe, for it is a *sine quâ non* that the cotton should *not* entirely cover the opening into the cavity of the tympanum.

"It is evident that unless some noise is going on of uniform loudness at the time of the experiment, the patient would experience a difficulty in estimating the success of the remedy. In my own consulting room, I have an instrument which I have called an *acometer*, having gradations of sound, and this is set going before commencing and during the application of the cotton. The patient is then directed to make some sign the moment success is attained. A metronome would answer the same purpose, and in the absence of any instrument of the kind, scraping the floor with the foot, rubbing the hand over the clothes, or snapping the finger and thumb while manipulating, will be sufficient to indicate to the patient the attainment of his wishes."

ART. 107.—*A new Suture for Hare-lip, &c.* By Mr. WOOD, Surgeon to the Gloucester Infirmary.

(*Medical Times and Gazette*, Jan. 3, 1857.)

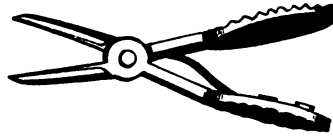
"Many years ago," says Mr. Wood, "I witnessed several failures following the use of the needle and twisted suture, which induced me to consider whether any other appliance could be substituted.

"In reflecting on the probable cause of failure in the cases to which I have alluded, it appeared to me that the rigidity of the needle, and the unavoidable compression of a portion of integument between it and the twisted suture, more especially at the point where the two are connected, produced a restraint and a pressure beyond that which was required simply to keep the edges of the lip in apposition, and thus occasioned an unnecessary source of irritation, tending to inflame and ulcerate the parts so constricted and compressed ; and, if the plan which I now submit be an improvement, I think this is mainly owing to the avoidance of these objectionable circumstances.

"In place of the needle I employ a pair of silver disks. Each of these has a perforation in the centre. Across the back of one of them a portion of silver wire of suitable form is soldered, and is thus attached by its two ends, while the interven-

ing portion lies over the perforation in the disk, leaving a free space on each side for the passage of threads. (Fig. 1.)

"A similar piece of wire is attached by a hinge to the other disk, so as to admit of being opened and closed, or rather, to speak more correctly, of being raised and lowered on the back of the disk. (Fig. 2.)



"The needle which I employ exactly resembles that sold in the shops as a darning-needle, No. 4; and it is armed with a double ligature of soft silk, five or six inches in length. To carry this needle a small forceps, which I have had constructed for the purpose, will be found very useful.

"Preparatory to the operation, the two free ends of the ligature (which has been previously threaded on the needle) are passed through the aperture in the disk (fig. 1): so that one end may pass out on each side of the silver wire, over which they are then secured by a knot.

"The opposite edges of the fissure being now pared as usual, the needle is intro-



duced as the hare-lip needle would be; but it is then drawn through, as well as the ligature, until the disk is brought up firmly against the lip.

"Disk, fig. 2, the wire being opened upon its hinge, is now threaded upon the ligature, and the needle being cut away, the ends of the ligature are separated, and the hinged wire closed down between them; and the pared edges of the fissure

having been brought firmly into apposition, the second disk is slipped up close against the lip, and the threads of the ligature are tied over the silver wire. The ligature is then complete.

"I conceive that this ligature affords an additional advantage over the needle and twisted suture, in facilitating the application and rendering more efficacious the operation of such auxiliary supports as it may be thought desirable to employ; and I believe that, in every case, it may beneficially supersede the twisted suture, than which it undoubtedly produces much less constriction and irritation of the parts included.

"Also, in closing the edges of wounds made in the great operations, where ligatures seem desirable; and in cases where deep sutures are required, and where the quilled suture is customarily employed, as in the operation for the cure of lacerated perineum, I think that the disks and double ligature may be used with advantage. For these purposes I have had disks constructed of larger diameter (figs. 3 and 4), and adapted to the curved needle requisite for these proceedings."

ART. 108.—*On some of the effects produced by Carious Teeth.*
By Mr. SAMUEL SMITH, Senior Surgeon to the Leeds Infirmary.

(*Lancet*, Feb. 14, 1857.)

The following cases are taken from a clinical lecture recently delivered at Leeds. They are of considerable interest as directing attention to some ill effects arising from carious teeth which are too often overlooked by practitioners.

CASE 1.—Elizabeth H.—æt. 40, was sent from some distance in the country to this infirmary, December 12th, 1856, to be treated for what she was told by a medical practitioner was a cancerous tumor in the cheek. On examination, a tumor, the size of a small chestnut, was found, with an ulceration of the mucous membrane, just fitting the sharp edge of one fang of a carious molar tooth of the lower jaw, which was making its way from the gum. Being fully assured, from former experience of many cases of a similar kind, that this was the sole cause of the tumor and ulceration, I removed the tooth, and promised her it should be well in a few days. A little lotion was ordered for the mouth. She appeared again on the next out-patient day, December 17th. The ulceration was healed, the tumor gone, and she was discharged cured.

CASE 2.—A gentleman from a distant town, where there is a large hospital, happened to have his leg broken in Leeds, and was in lodgings under my care. His wife came to attend upon him, and she consulted me about an ulcerated tumor in the cheek, which had existed a long time, and for which she had had the advice of several surgeons, and various applications used without advantage. I detected one fang of a carious molar of the lower jaw laid horizontally on the gum, but adherent and embedded in it, with the ragged point fitted into the centre of the tumor. I pushed it away with my pencil case, and the tumor disappeared in a few days. Both these patients were under the impression that they were suffering from cancerous disease.

Sometimes, instead of the cheek, the tongue suffers from the same cause. I have detected many cases of this kind. One interesting example shall be sufficient to explain such cases.

CASE 3.—More than thirty years ago, one out-patient day, my senior colleague (Mr. Hey) informed me that a few days previously he had incised a malignant-looking tumor from the tongue of a young countrywoman, who was a private patient of his; that, to his surprise, in a few days the tumor had sprouted out as large or larger than before the operation; that, as she was not in circumstances to pay consultation fees, he had requested her to be in the house-surgeon's room at twelve o'clock, in order that he might ask Mr. Chorley's opinion, along with my own, on the case. On that day Mr. Chorley did not come to the infirmary, and I went with Mr. Hey to see his patient. There was a foul, dark, fungoid tumor, which occasionally bled, and from which she suffered much pain during every attempt to speak or masticate food; it was the size of a small walnut. On examining it with the finger, I detected two broken incisors (the middle and left lateral of the lower jaw) leaning inwards, and with sharp-pointed edges fitting into the centre of the tumor. I was immediately convinced that these two teeth were the

cause of all the mischief, and stated that opinion to Mr. Hey, who appeared doubtful. I said that he would not be justified in applying the ligature, or using any other means, without first waiting to see the effect of the removal of the two broken carious teeth. I never saw the young woman again, but I was informed by Mr. Richard Hey, that the teeth were drawn, and soon afterwards the tumor entirely disappeared, without any other means being resorted to.

Sometimes carious teeth produce abscesses in the cheek, neck, and throat; these burst or are opened, and form fistulous sores, which will remain unhealed for months and years unless the cause be removed, just in the same manner as you see fistulous openings in the leg in cases of necrosis, and which remain open for years until the sequestrum is removed.

CASE 4.—Soon after I commenced practice, I frequently met a young gentleman of fortune walking about with a piece of black plaster on the left cheek, as large as a dollar. I often wondered what could be the matter, but not being his attendant I had no business to inquire. After suffering the annoyance of his black plaster for a very long time, and being in London, a friend persuaded him to consult Sir Astley Cooper. He made very short work with him, took his fee, and sent him to a dentist to have a certain upper molar removed, informing him that he would be well in a few days after. His prognosis was verified by the result. This young gentleman is now an old one, and I occasionally meet him; he has never worn his black plaster since, but he has the appearance of a Peninsular veteran who had received a musket-ball in the left cheek.

CASE 5.—A few years ago a middle-aged man, residing in the south, and who travels every year with surgical instruments on sale, after transacting business with me, asked my opinion about a fistulous sore which opened on the middle of his whisker on the right cheek. I introduced a probe, and came in contact with the fang of the last molar tooth of the upper jaw. I persuaded him to allow me to draw it, on the promise that he should be well in a few days. I requested him to write by post on the tenth day, and let me know the result. He wrote to say the discharge ceased the day the tooth was drawn, and that it was perfectly well. Now, here was the case of a person in constant communication with surgeons, selling them daily caoutchouc instruments of his own manufacture. He had suffered for a long period, had often taken advice, but had never had the true nature of his disease pointed out to him.

CASE 6.—Seven or ten years ago a young woman came under my care at the infirmary with a fistulous sore in the fore part of the throat, within an inch of the sternum. It had been discharging upwards of a year. I probed it; the instrument could be passed in the direction of the molar of the lower jaw on the left side. On inquiry, she said that eighteen months before she had had a tooth drawn at the dispensary, but the fangs of the tooth were left in the jaw. Afterwards an abscess formed, which descended lower and lower till it burst midway between the sternum and pomum Adami. I drew the stumps; it still discharged for a week or ten days, when it got well without any other treatment. I mention the above case to impress on your minds the possibility of the fistulous orifice being at a considerable distance from the offending tooth. The fistulous sores proceeding from carious teeth are generally on the cheek or at the angles of the jaw. On the application of the probe you will often find the instrument pass readily to the interior of the mouth; you have then only to select the proper victim for sacrifice, and you will rarely err in this respect. Where the sinus from the sore to the tooth is short, the discharge from the external sore will generally cease in a day or two after the extraction of the tooth, but where it is long, as in the above case, it may be a week or two.

There is an excellent old adage—"Prevention is better than cure." This applies well to surgery, and especially to such cases as we are alluding to; for as abscess in these cases always precedes the formation of a fistulous sore, it should be your endeavor to detect these cases at this particular period. I find that several cases of this kind come under my observation every year; the last, during the present month.

CASE 7.—Thomas K—, an Irishman, æt. 50, was admitted as an out-patient on the 2d of January. His case is set down as abscess in the cheek. The jaw was closed: he could not open his mouth. He came again on the 7th, no better; and it was not till the 14th, that I detected the true nature of the case. I examined the

mouth, and found two detached fangs of a molar of the lower jaw carious and loose; he could not open the mouth sufficiently for the introduction of forceps, but I pushed them out with a punch.

January 21st.—He says he could open his mouth comfortably the following day; the swelling had gradually subsided, and he was discharged, cured.

CASE 8.—A long time ago, a near relative consulted me about an abscess at the angle of the jaw, on the right side. I suspected its cause, for on pressure I could make pus appear at the edge of one of the molars. He refused to have the tooth drawn until I assured him the abscess would burst externally, and continue discharging till the tooth was removed, and that an ugly scrofulous-looking cicatrix would remain for life. The tooth was drawn; the abscess discharged itself into the mouth, was soon well, and left no mark.

Now in both these cases, if the cause had not been detected when it was, in ten or twelve days the abscess would have burst externally, and a fistulous sore would have been the consequence, which would have continued discharging until the teeth had been removed either by nature or art. I have seen scores of such cases. Whenever you extract a tooth in these cases, always examine it carefully; you will invariably find the fang deprived of its periosteum, and sometimes a little sac attached to its root, containing pus.

Sometimes, where abscess forms from a carious molar of the upper jaw, the matter, instead of making its way to the cheek, gets into the antrum. I have seen several cases of this kind, and have at present a private patient under treatment. Remove the tooth, and if this does not give a sufficient outlet for the matter, perforate the antrum with a joiner's gimlet. There has been a very interesting case of this kind recorded in the journals during the present month.

CASE 9.—A horse was condemned to the knacker's yard as being afflicted with glanders, having a foul offensive discharge of purulent matter from the nostrils, and being in the last stage of emaciation. A veterinary surgeon finding it could not masticate its food, examined its mouth, and detecting a carious tooth in the upper jaw, extracted it. The discharge ceased; the horse soon began to thrive and got well. Here was a case in which there was as much professional credit due to the surgeon as if instead of saving a horse from the knacker's yard he had saved the life of an alderman.

ART. 109.—*On the treatment of Ranula.* By M. GOSSELIN.

(*L'Union Médicale*; *Boston Medical and Surg. Journal*, Dec. 4, 1856.)

M. Gosselin, after alluding to the various modes of treating ranula that have been adopted, and the relapses that are so common after them, describes the plan that he has himself found beneficial. He first of all performs excision, as recommended by Boyer, and then cauterizes with the nitrate of silver. Next day he introduces a probe into the wound, owing to its tendency to close, and repeats the cauterization the day after that. On the third or fourth day he enlarges, by means of the scissors, the aperture, which has become too narrow, and on the following day cauterizes again. After ten or twelve days of this assiduous attention, if, on the introduction of a probe, he finds the cavity is obliterated, he leaves the opening to itself. If, however, a track of a certain extent still exists, he again enlarges the orifice with scissors. This attention to the case is rarely required beyond fifteen days, when the external opening becomes closed, and the cavity being obliterated, there is no fear of relapse. M. Gosselin has operated in this way in several cases, and in three of these, which he has watched for several years, no relapse has ensued, the opening remaining closed. This plan of procedure has also been extended to various analogous cases, in which there is a cavity with secreting walls, having no spontaneous tendency to approach each other.

ART. 110.—*On a grooved hook for Tracheotomy.* By Mr. T. SPENCER WELLS, Surgeon to the Samaritan Hospital, &c.

(*Medical Times and Gazette*, Feb. 28, 1857.)

"This instrument is represented in the annexed wood-cut. It is simply a grooved hook or tenaculum, the groove running along the convexity. It was devised by

M. Chassaignac, and described by him in his *Leçons sur la Trachéotomie*, published in 1855. It has not been made known, so far as I am aware, in this country, and as it supplies us with a simple, certain, safe, and rapid means of fixing the trachea, I think it worthy of attention from British surgeons.

"Nothing can be easier than the performance of tracheotomy in the dead subject, or on patients so far asphyxiated, or in such a state of syncope, that the trachea is motionless. But while respiration is going on, the trachea ascends and descends with each expiration and inspiration—to a slight extent, it is true, when respiration is normal, but in a very different degree when it is obstructed. This mobility of the trachea may not cause any great difficulty in opening it if the patient be an adult, but those who have been called upon to perform tracheotomy on a young child with a short, fat neck, know well how very desirable it is to be able to fix the trachea. Cases are on record in which surgeons have been actually unable to open



the canal. In other cases the important vessels on either side have been wounded. The knife, during some sudden motion of the patient, has traversed the trachea and wounded the œsophagus, the accident being followed by the escape of fluid and solid aliments into the trachea, or the knife has passed too close to the sternum and wounded the innominate. Still more commonly the trachea has not been opened in the centre, but to one side, so that the wound in the skin and the tracheal opening have not corresponded, and there has been difficulty in fixing the canula. Lastly, even supposing the incision to have been properly made in the trachea, there has been delay and difficulty in the introduction of the canula. Who has not seen, that as soon as the trachea is opened, and before the surgeon has had time to separate the divided edges and introduce the canula, the patient cough and sob, and a little blood passing into the air-passages, at once begin to cough spasmodically, bespatter the bystanders with bloody mucus, and appear to suffocate, while the surgeon is vainly endeavoring to fix the trachea, and possibly the patient may be dead before the canula is introduced? Such things have been.

"All these difficulties and dangers may be avoided by the use of M. Chassaignac's grooved hook. In a case where there is no necessity for speed, the trachea may be laid bare by incision, but let us take one where no time must be lost. The cricoid cartilage is the point to be fixed. This is a certain guide, as it can be felt always however young or fat the patient may be. It is the only complete ring in the tube, and therefore resists pressure while all the rest of the tube yields before the finger. The finger is passed upwards from the sternum in the median line until the resisting cricoid cartilage is felt. It is immediately beneath the lower border that the hook is to be inserted. The nail of the left index finger marks the lower edge of the cartilage, and the hook held in the right hand is passed close to the nail directly into the trachea. The only difficulty in doing this is from the skin moving over the cartilage, but this may be avoided by a simple puncture. When the hook is in the trachea the handle is made to describe half a circle, and is brought up to the centre of the patient's chin, so that the cricoid cartilage being held firmly, the trachea may be drawn upwards and forwards well out of danger. A little air and bloody

mucus escaping along the groove is a certain sign that the hook is in the trachea. This being the case, of course nothing is more simple than to pass a knife along the groove and divide three or four of the tracheal rings. By holding the hook in the left hand and the knife in the right, the operator has the most perfect command of the trachea, not only for the incision, but for the dilatation of the wound and the introduction of the canula.

"I am quite aware of the objections which may be made to the introduction of a new instrument; such as its being unnecessary, the operation having been very well done with a penknife and a quill, or a scalpel and a piece of bent wire—that the instrument would never be at hand when wanted—and so on; but while admitting

that the surgeon should be prepared to act with the simplest tools in case of emergency, I think any one who has tried M. Chassaignac's hook once would be disposed to do so again, and nothing would be easier than to add a groove to the ordinary tenaculum of the pocket case."

ART. 111.—*On the "ready method" in cases of Choking.*
By Dr. MARSHALL HALL.

(*Lancet*, Jan. 17, 1857.)

"Death in choking is the result of a diastaltic spasmodic closure of the glottis.

"Nothing can be done in this stage of the accident, except, 1, to endeavor, by introducing the finger into the fauces, to induce vomiting; 2, to introduce something like a *bougie* into the œsophagus (a firm scroll of linen being the readiest); or, 3, to adopt a measure, which I adopted on an emergency, with immediate success, some years ago.

"A little boy, eating some fowl in haste, attempted to swallow too large a morsel, and was choked; I ran to him, placed him between my knees, one knee (the right) pressing firmly on the stomach, the other on the back; I then placed one hand (the left) on the back of the thorax, whilst I gave a firm blow with the other on the sternum. In an instant I had the joy of seeing the morsel of chicken expelled with force to a considerable distance; and all was safe!

"But supposing all these efforts to fail. What is then to be done?

"In the midst of the asphyxia induced by the closure of the glottis, the excitomotor power fails, and the larynx is no longer spasmodically closed; and now the 'ready method' may be adopted, with the effect of sustaining life, until such a *bougie* is made as shall be effectual in pushing down the morsel of food or other object in the pharynx or œsophagus.

"A firm scroll of cotton or linen, when imbued with grease, made from a sheet, a window-blind, or curtain, may then be made, not in too great haste, and be boldly passed into the œsophagus.

"The morsel of food is generally lodged in the pharynx, or upper part of the œsophagus, and, when found lower down, ceases to excite reflex action of the larynx; and breathing is, therefore, possible.

"A thin bent tallow-candle, or a piece of firmish cord (taken from the window-frame), might answer the purpose of the *bougie*.

"The 'ready method' procures us the time necessary for obtaining or preparing any of these means, and for giving full directions to the assistants. In performing it, a little brisk movement may be adopted in pronation, and in making dorsal pressure, which may, if not at first, eventually, dislodge the foreign body.

"I need scarcely suggest, that this last measure should also be enforced in cases of a foreign body inhaled into the larynx both *before* and *after* tracheotomy, with the addition of a firm blow, with the open hand, on the back."

ART. 112.—*Complete Dislocation of the Cervical Vertebra, and successful reduction on the tenth day.* By Dr. DANIEL AYRES, of Brooklyn, New York.

(*New York Journal of Medicine*, Jan. 1857.)

This case is accompanied by two colored lithographs representing the appearance of the patient before and after reduction, and by a somewhat comprehensive review of the literature relating to the subject.

CASE.—E. K., the subject of this accident was a laboring man, æt. 30, tall and muscular, but not fat, with a neck longer than the average among men of equal height. On the evening of the 2d of October he became intoxicated, was brought home insensible, and did not recover from the combined effects of the shock and his libations until the following morning, when he was supposed by his wife to be laboring under cold and a stiff neck. She made some domestic applications to the affected part, and administered a dose of cathartic medicine. When it was thought sufficient time had elapsed without obtaining relief, he was seen by Dr. Potter, of this city, and afterwards by Dr. Cullen, both of whom recognized a condition which was not only very unusual, but one which they had never before observed. I was then requested to examine the case, which I did on the ninth day

after the accident. With some assistance and great personal effort, he was able to get out of bed, moving very slowly and cautiously. Desiring to expectorate, he was obliged to get down on his hands and knees, which he accomplished with the same deliberation. When seated in a chair, the head was thrown back and permanently fixed; the face turned upwards with an anxious expression. The anterior portion of the neck, bulging forwards, was strongly convex, rendering the larynx very prominent. The integuments of this region were exceedingly tense and intolerant of pressure. The posterior portion of the neck exhibited a sharp, sudden angle at the junction of the fifth and sixth cervical vertebræ, around which the integuments laid in folds. It was difficult to reach the bottom of this angle even with strong pressure of the fingers, and, of course, the regular line formed by the projecting spinous processes was abruptly lost. He complained of intense and constant pain at this point, which was neither relieved nor aggravated by pressure. With difficulty he swallowed small quantities of liquid, pausing after each effort, and could not be induced to take solid food, since the first attempt to do so after the accident was followed by violent paroxysms of coughing and choking. His breathing was obstructed and somewhat labored, being unable fully to clear the bronchia of their secretion. This, however, seemed rather an effect of the tense condition of the soft parts of the neck, than the result of pressure upon the spinal cord, since he presented no evidence of paralysis, either of motion or sensation, in parts below the neck. The sterno-cleido-mastoid muscles of both sides were felt quite soft and relaxed.

But one conclusion could be formed upon this state of facts, to wit: that the oblique processes of both sides were completely dislocated. The marked rigidity of the head seemed to preclude the probability of fracture through the vertebral bodies; and although the cartilage might be separated anteriorly, yet, the body not pressing backwards sufficiently to produce paralysis of the cord, it was hoped that the posterior vertebral ligament remained uninjured; it was, therefore, determined to make an effort at reduction on the following day. In addition to those originally connected with the case, I am under obligations to Drs. Ingraham, Turner, Palmedo, G. D. Ayres, and a number of other medical gentlemen who were present by invitation, all of whom confirmed the diagnosis, and rendered efficient services:

The patient was placed upon a strong table in a recumbent position, with a pillow resting under the shoulders, the head being supported by the hand during the administration of chloroform, of which an ounce was given before anæsthesia ensued. Counter extension being made by two folded sheets placed obliquely across the shoulders and properly held, the head was grasped by one hand placed under the chin, the other over the occiput, and by steadily and firmly drawing the head directly backwards, and then upwards, an attempt was made at reduction, but failed for want of sufficient power. Dr. Ingraham was then requested to place his hands immediately over my own in the same position as before, and steady traction was again made in the same direction. Our united strength was required in drawing the head backwards and upwards, to dislodge the superior oblique processes from their abnormal position. When this was felt to be yielding by Dr. Cullen (who kept one hand constantly at the seat of dislocation), Dr. Potter was directed to place his hands under our own, still in position, and assist in bringing the head forward; at the same time the chest was depressed towards the table. The bones were distinctly felt to slip into their places; the line of the spine was instantly restored, the head and neck assuming their natural position and aspect. As soon as the patient became conscious, he expressed himself ignorant of what had taken place, but free from pain, and, in his own language, "all right." A bandage was arranged to support the head and keep it bent forward. He had an anodyne for two nights following, after which no further treatment was necessary, and at the end of one week he had complete control over the movements of the head and neck. Beyond the debility and emaciation immediately dependent upon protracted fasting and loss of rest, he has experienced no uneasiness since the operation. His appetite is now good, and all the functions perform their duty normally. In a subsequent inquiry, to determine if possible the cause of the accident, he states that he distinctly recollects going into a store in Atlantic Street, near the ferry, and there having angry words with an acquaintance; that he left the store and was proceed-

ing up the street (which is here a rather steep ascent), when he was violently struck from behind, over the lower portion of the neck. He likewise remembers falling forward and striking against some object, but does not know what it was, nor what took place until the following morning.

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 113.—*A case of fracture of the neck of the Scapula, and of the Coracoid Process.* By Mr. BRODHURST, Assistant Surgeon to the Royal Orthopædic Hospital.

(*Medical Times and Gazette*, March 7, 1857.)

Accidents of this kind are of considerable rarity, as is evident in the fact that Sir A. Cooper did not meet with one in the course of his practice, and that Mr. South, in his edition of 'Chelius' Surgery,' has expressed a doubt as to its existence. In addition to his case, Mr. Brodhurst cites one from Du Verney's '*Traité des Maladies des Os*.'

1. *Mr. Brodhurst's case.*—A gentleman, æt. 62, was thrown from his horse in the hunting-field during the season 1854-55. He is a muscular man, weighs twelve stone, and is five feet ten inches in height. At the time of the accident he was riding with the pack in full cry, when his horse, setting his foot in a hole, fell. The rider was thrown on to his right shoulder, and fell clear of his horse. I saw him soon after the accident, and found the acromion very prominent, with a deep depression beneath it, the deltoid flattened, the arm lengthened and drawn away from the side. The shoulder could be restored to its normal shape, and the arm be brought close to the side, on raising the arm, the scapula being fixed with one hand and the elbow grasped with the other; but the deformity recurred so soon as the support was removed.

Every motion of the limb was acutely painful. Crepitus was very distinct on moving the scapula, having raised the humerus. But crepitus might also be felt, though less distinctly, without raising the humerus to its proper position. The coracoid process was also fractured. It afforded crepitus entirely distinct from that which was communicated from the neck of the scapula.

The limb did not present the appearance of a dislocation of the humerus into the axilla, and the accident could not have been mistaken for a dislocation. Also, the appearance of the shoulder and the position of the limb were sufficiently peculiar to prevent this accident being mistaken for a fracture of the neck of the humerus.

The treatment consisted of supporting the arm from the elbow against the side, a small pad being placed in the axilla. The right use of the extremity was not regained in less than eight months.

2. *Du Verney's case.*—"A girl, about twenty years of age, fell into a stone-quarry, where she was found dead. The body was much bruised, and several ribs were fractured. On examining the left arm I believed it in the first instance to be dislocated; but, having made an incision through the integuments and muscles, I found the head of the humerus occupying its proper capsule, and recognized a fracture of the neck of the scapula. The neck of the scapula and the coracoid process were detached from the body of the bone."

ART. 114.—*On a peculiar displacement of the Scapula.* By Mr. BRODHURST, Assistant-Surgeon to the Royal Orthopædic Hospital.

(*Medical Times and Gazette*, Feb. 7, 1857.)

This case (which was communicated to the Royal Medical and Chirurgical Society, 27th January, 1857), is described as displacement of the scapula upwards through paralysis of the serratus magnus muscle, and consequent retraction of the rhomboid, levator anguli scapulæ, and trapezius muscles. Mr. Brodhurst speaks of it as a very rare affection.

CASE.—The patient was sixteen years of age, tall and robust. The right shoul-

der was two inches higher than the left, and the inferior angle of the right scapula was five inches higher than that of the left side. The postero-superior angle of the scapula projected immediately beneath the skin on the anterior surface of the neck, one inch and a half above the clavicle. Immediately above this point the trapezius formed a thick, prominent cushion. The serratus magnus muscle of the right side could not be distinguished even during forced inspiration. The motions of the right arm were limited—that is to say, the elbow could be raised only seven inches beyond a right line with the trunk, and violent movements of this arm occasioned pain, in consequence of the projection of the scapula. Paralysis of the serratus magnus muscle had been produced when the patient was two years old, by her being caught by the arm when falling from the arms of a relative. Weakness of the limb was observed soon after the accident, and in the course of some months the shoulder was observed to be unduly prominent. A weight of five pounds was fastened upon the shoulder, and this was subsequently increased to eight pounds, which was worn during several years. The rhomboid muscles, the levator anguli scapulae, and portions of the trapezius muscles were tensely retracted. These muscles were divided subcutaneously, and after the fracture had healed, pressure was made above the spine of the scapula, to endeavor to depress that bone. This was so far successful, that the normal position of the scapula was in great measure regained, the motions of the shoulder were rendered more free, and pain on motion was entirely removed.

ART. 115.—A case in which the Heart was fatally wounded by a small Splinter of Flint. By Dr. HERNOUX, of Auxerre.

(*Gaz. Hebdomadaire de Méd. et Chir.*, Jan. 16, 1857.)

CASE.—Thomas —, æt. 57, while engaged in breaking stones upon the highway, was struck by a splinter of flint close to the left border of the sternum, between the fourth and fifth ribs. The wound was very small, a very little blood escaped from it, and the edges were in contact; indeed, everything seemed to show that the injury was little more than a mere scratch. But the man complained of difficulty in breathing, and he was removed to the hospital at Auxerre. There he was bled freely, and with some present relief. The next day (16th August, 1856) he was paralyzed on the right side, and altogether unconscious. On the day following he died. On examination a thick clot of black blood was found covering the entire pericardium, and the pericardium itself was pierced with a small opening corresponding to the wound in the neighboring parietes of the chest. The cavity of the pericardium was also filled by a quantity of black blood, by which the heart was greatly compressed. And lastly, the left auricle was found to be pierced with a small ecchymosed opening corresponding to the opening in the pericardium and parietes of the chest. There was also a sanguineous clot in the left ventricle of the brain.

ART. 116.—On Palpation of the Abdomen in certain cases of Internal Strangulation. By Dr. MARROTTE.

(*L'Union Médicale*, Sept. 2, 1856; and *British Med. Journ.*, Dec. 13, 1856.)

Dr. Marrotte related to the Medical Society of the Parisian Hospitals, on July 9th, 1856, the history of a case in which the arrest of a biliary calculus in the small intestines produced symptoms of internal strangulation. He observed, that only five cases of the kind had been recorded by M. Fauconneau-Dufresne; they had occurred in the practices respectively of Drs. Mayo, Monod, Renault, and Reignier, Broussais, and Puyroyer. In one only of these cases—that of Mayo—did recovery take place.

The following were the principal features in Dr. Marrotte's case. The patient was an old lady aged upwards of sixty. For about ten years she had been subject to sudden pains, which she called colic, coming on at long intervals, sometimes at the beginning, sometimes at the end of a meal. In April, 1855, a more severe attack occurred, accompanied by much neuralgia of the integument over the region of the liver; the pain always appearing to proceed from the region of the gall-bladder. Subsequently to this, she was attacked with excessive pain in the right

hypochondrium, but more confined to that region than before, and increased on pressure. On palpation, a deep-seated, wide, but distinctly-bounded resistance, was felt. There was much fever. This attack M. Marrotte ascribed to ulcerated inflammation of the gall-bladder, by which an opening into the duodenum was formed, allowing the gall-stones to escape. The symptoms soon abated, leaving the patient, however, with constipated bowels. In about two months, she was attacked with violent pain, radiating from a point between the umbilicus and ensiform cartilage. The integument was not tender; but the pain was increased by deep pressure. There was nothing abnormal discovered in the right hypochondrium. There were also the ordinary symptoms of intestinal strangulation. After an ineffectual employment of ice, morphia, and enemata, M. Marrotte made a careful manual examination of the abdomen. While he was doing this, the patient said that she thought "he had displaced the cause of her disease, and that she felt less pain and distress." He did not attach much importance to this statement; but, on his visit next day, he was agreeably surprised to find that the nausea and vomiting had ceased; and that the patient had had two semi-fluid alvine evacuations, one of which contained a substance of the size of a green walnut, which, on examination, was found to be a biliary calculus. On subsequent days, other small calculi were passed; and the patient recovered. (Abridged from *L'Union Médicale*, September 2d, 1856.)

On referring to Mr. Joseph Hinton's paper on "Intestinal Obstruction," published in the 'Association Medical Journal' for May 7th, 1853, we find, in the table which he has given, reference to three other cases of obstruction from biliary calculus; one published by the late Dr. Abercrombie, in his work on 'Diseases of the Stomach'; the other two by Dr. Oke, in the 'Provincial Medical and Surgical Journal' for July 7th, 1852.

ART. 117.—*On the valvular nature of Strangulated Hernia.*

By Dr. ROSER.

(*Vierordt's Archiv*, 1856; and *Med.-Chir. Rev.*, April, 1857.)

Incarcerated hernia, in Professor Roser's opinion, essentially depends upon a valvular mechanism. The obstruction of the contents of the intestine in the incarcerated portion arises from the folds of the mucous membrane lying valve-like against each other, and preventing the passage of gas, fluids, &c. Looking at the complete obstruction which takes place in the hernia, one might suppose that the parts concerned are compressed as closely as is an artery when tied. But all observation teaches us that no such pressure is here exerted; for while the venous circulation is only partially arrested, the arterial remains uninterrupted. Were it otherwise, indeed, the intestinal fold would become rapidly gangrenous. The question is why, if there is space enough to allow of the circulation in the part to continue, cannot we by pressure return the contents of the intestine.

The nature of the obstruction may be shown by a simple experiment. If a noose of intestine, containing some fluid or air, be brought within a ring about the size of the finger, and then pressure be made upon the apex of the noose so as to force the contents against the compressing body, complete obstruction to their passage will be found to prevail. And yet a catheter may be passed beside the intestine, and, by drawing the latter a little to one side, a considerable space will be perceived. If pressure be made in front of the encircling ring, the contents of the intestine are forced back; but if we press at the end of the noose, the portion that lies next to the ring is forced against the latter, and the canal is closed. If we open the noose on its convex side, and fill it with water, we may observe the valvular disproportion of the intestinal folds, which resemble the valves of the aorta when acting under water.

Deferring to another occasion the exposition of his theory of the taxis deducible from these views, Professor Roser now points out the support they give to the operation for hernia, without opening the sac—a procedure he regards as one of the greatest improvements in surgery since the days of Paré. He believes it has made little progress in Germany and France, as compared with England, in consequence of the prevalence of a false theory of strangulation of hernia and erroneous ideas on the surgical anatomy of hernia. In respect to the first of these, too exaggerated an idea of the constriction that takes place has been entertained, leading to a belief

that the mere dilatation of the tendinous margins could not suffice for the return of the distended and indurated hernia. The above experiment, which proves the valvular nature of the obstruction, must surely give more confidence in the efficacy of the external incision. We have not space to follow the author in his description of the anatomy of femoral hernia, and which, indeed, essentially resembles that furnished by Cooper.

ART. 118.—*On the use of Tannin and Glycerine in Fissure of the Anus.*

By Dr. VAN HOLSBEEK.

(*Dublin Medical Press*, Jan. 14, 1857.)

Dr. Van Holsbek, considering the contraction of sphincter as the effect and not the cause of fissure of the anus, directs his attention to the latter. He has treated with success several cases in which the fissure has persisted after the division of the sphincter by means of the following application; glycerine, 16; tannin, 1. A more or less voluminous tent is dipped into this and introduced into the rectum night and morning; and after a while the patient can do this for himself. It acts both by the topical influence it exerts upon the fissure, and by its compression (its size being increased) at will, upon the constriction. In order to prevent a relapse, great care must be taken to obviate the occurrence of constipation for the future.

ART. 119.—*Prevention of bleeding after operations upon the Rectum.*

By Mr. SALMON, Surgeon to St. Mark's Hospital for Fistula, &c.

(*Medical Times and Gazette*, March 14, 1857.)

In the operation for fistula and fissure Mr. Salmon is in the habit of making very free and deep incisions, and his rule in the former disease, of cutting the base of the sinus as well as the sphincter, necessarily involves an extent of incision at least three times as great as that usually employed. Hence not unfrequent hemorrhage would result if certain precautions were not adopted. Of these precautions the first is the use of cotton-wool instead of lint, as a dressing. Immediately after the incisions are completed, a large plug of the finest jeweller's wool, is introduced into the gut, and pressed gently into the whole length of the wound. There is some art in accomplishing this neatly and efficiently. A metal probe, the thickness of a quill, should be used, and the forefinger of the left hand having first been passed into the bowel, the latter is held well open, away from the wound; the tuft of wool is then pushed high up into the gut, and lastly pressed down on the line of incision. The wool must on no account be oiled, otherwise its object, as a restrainer of hemorrhage, will be defeated, since it is by its loose and absorbent texture that it forms so excellent a plug. Its softness prevents its becoming a source of irritation to the rectum, as a fold of lint of any size generally does. Each patient on being sent back to bed has a separate attendant allotted to him, whose duty it is to sit by him with a piece of sponge gently pressed against the anus, and to report any bleeding should it occur. No styptics are ever used; and the actual cautery, which is deemed the one resource, has been employed at the hospital but twice during the last two years. Continued pressure is the means which is almost invariably found efficient.

ART. 120.—*Partial Amputation of the Penis by accidental Linear 'Ecrasement.'*

By Mr. WORMALD, Assistant-Surgeon to St. Bartholomew's Hospital.

(*Associated Medical Journal*, Nov. 15, 1856.)

This case occurred among the out-patients at St. Bartholomew's Hospital:

CASE.—The patient was a boy affected with loss of sensation in the penis, and a fistulous passage communicating with the urethra. The parts were also very much swollen. The boy would give no history of the matter, except as he said, that he had been knocked down by another boy, who stood upon him, or hurt the penis. Mr. Wormald, discrediting this statement, made a careful examination of the parts, to find if any other force had been used, or a string tied about the root of the penis, as he at first suspected. The pain at one part was excessive. In order, therefore, to examine the organ sufficiently, the boy was placed under the effects of chloroform. The case, in fact, required very active treatment, as gangrene of the penis

was impending. On a careful investigation, it was found that a sort of *écraseur* operation had been effected by means of a small string, which was at some time firmly tied round what was once the base of the penis. This string Mr. Wormald removed by an operation, and preserves as a curiosity. The most curious part of the case is, that as the parts swelled, and as the cells of the corpora cavernosa, in the act of distending, buried the tight ligature out of sight, the ligature had slowly cut through the nerves and vessels of the penis; but, as in the operation of linear *écrasement*, the parts healed again as fast as they were cut; and in this manner, the nerves having been cut, all the end of the penis was without sensation. The urethra was possibly one of the first parts that was cut; and as a fistulous opening was established, it had remained patulous. There seemed every reason also to fear gangrene of the parts, as the vessels had also been partially destroyed. Urethro-plasty, as we have seen it in the practice of Mr. Henry Thompson, might cure the fistula; but to remedy the anæsthesia or paralysis is almost impossible.

ART. 121.—*On the treatment of Warts and other growths upon the Genital Organs by the application of Chromic Acid.* By Mr. MARSHALL, Assistant-Surgeon to University College Hospital.

(*Lancet*, Jan. 24, 1857.)

The chromic acid employed is prepared from the chromate of potash and sulphuric acid. Definite proportions of the crystallized acid are dissolved in distilled water, and the slight trace of sulphuric acid present was precipitated by a drop or two of a solution of bichromate of baryta; but this extreme care to obtain a pure solution is found by comparative trials to be practically unnecessary, although considered desirable in a first series of experiments. The strength of the solution ultimately adopted was in the proportion of 100 grains of crystallized chromic acid to a fluid ounce of distilled water.

The acid solution is best applied by aid of a pointed glass rod, or where a large quantity is needed, by means of a small glass tube drawn to a point. Only so much should be applied as will saturate the diseased growth, avoiding the surrounding healthy mucous membrane; for although the solution is not sufficiently powerful as an escharotic to destroy or even vesicate the mucous membrane, it may give rise to an unnecessary amount of subsequent inflammatory action, which of course it is well to avoid, but from which no serious consequences have been found to ensue. Any superfluous acid may be removed by a piece of wet lint. The first effect of its application to the warts is to produce a slight smarting pain. If, however, any ulcerated surface be touched, the pain is of a burning character, more lasting, but not so acute and intolerable as that caused by the nitrate of silver, or by nitric acid with or without arsenious acid. After a short time the pain passes off, but there is gradually established a certain aching and soreness, dependent on the excitement of more or less inflammation in the parts. This inflammatory action is accompanied by a purulent discharge, and under its influence the morbid growths rapidly waste, in some cases being thrown off altogether, and in others undergoing a partial though evident diminution in size. The best immediate dressing to the parts is dry lint, as that does not dilute the strength of the chromic acid solution, and is at the same time clean. Afterwards the lint should be changed twice daily, or, what appears to be better as a check to any inflammation, the parts may be washed with a solution of lead, and dressed with lint moistened in the same.

In most cases of warts, one application suffices, the cure being completed in from four to eight days. The extreme period to which the inflammation set up by the chromic acid has been found to continue active is about four days. In severe cases, where the warts are large, repeated applications are necessary, each being followed by less inconvenience and less of the characteristic inflammatory action. In but one instance, so far as hitherto observed, have more than three applications been required, and in that there was great neglect as to proper cleanliness and dressing. It remains to be seen whether warts consequent on syphilis are quite as manageable as those clearly of non-syphilitic origin.

CASE 1.—A young girl of fair complexion and delicate skin, the subject of

sypilis for the previous eleven months, who suffered in regular order from primary sores, a small bubo on the left side, maculæ, sore-throat, eruption on the head, enlargement of the sub-occipital glands, and, finally, a scaly eruption on the thighs and legs, and who had undergone (but only after the declaration of the secondary symptoms), a mild mercurial course, applied to Mr. Marshall to be relieved of numerous warts, situated on the nymphæ, the margin of the vaginal orifice, the perineal raphe and the verge of the anal aperture. There were nearly thirty separate growths, some pedunculated, some sessile, some deep-red and highly vascular, others paler and covered with a thick epidermoid covering, but all exquisitely tender. Nitrate of silver, the acid nitrate of mercury, nitric acid, and nitric with arsenious acid were applied at different times. Acetic acid and creosote had already been used. The mixed nitric and arsenious acids produced the most effect, but the pain and suffering caused by their application were so intense that the patient would not submit to the necessary repetition of the remedy. Under the influence of chloroform nearly all the warts were then snipped off with scissors, and nitrate of silver was freely applied. During this varied local treatment, which occupied about a month, the cutaneous eruptions and sore-throat quite disappeared, under the use of small doses of iodide of mercury. But the troublesome verrucæ were only temporarily suppressed. At the end of a fortnight they had reappeared, and the patient absolutely refused to submit to any further treatment by caustics or excision, even if chloroform were again employed, as the pain after the last operation had been so severe. For the next four or five weeks burnt alum and lead lotion were applied, and at the same time the constitutional treatment was omitted. The cutaneous eruption did not return, but the warty growths became as large and painful as ever.

Finding it useless to recommend a recurrence to remedies already too familiar to the sufferer, and endeavoring to devise some further means of treatment, Mr. Marshall first conceived the idea of trying the effect of chromic acid, and, after using much persuasion, was allowed to touch with it a single warty growth. For this purpose, a small quantity of the crystallized acid was exposed to the air until it had completely deliquesced, and then an equal bulk of water was added to it. When a drop of this very concentrated solution was applied to the condemned wart, instant deoxidation of the acid ensued, and the growth became covered with a blackish-brown, lustrous film of oxide of chromium. Very little pain was produced, but a drop of water being now applied, on the supposition that further dilution was necessary to enable the remedy to penetrate the substance of the wart, a smarting sensation followed, which lasted a few minutes. No further inconvenience ensued, and in four days this particular wart had disappeared. A second trial was then made on four larger masses, with a weaker solution of chromic acid. The acid was not deoxidized in the same way as before, but the growths were stained of a bright orange-yellow color. A little more pain, smarting, and heat were produced, but these were transient and tolerable, and at the end of a week, after some little soreness and discharge, the parts touched had wasted down to slightly elevated indurations. On the third occasion, the patient's confidence being established, and her fears of pain relieved, all the remaining warts on the vulva, perinæum, and anus were freely touched. The surfaces implicated being now extensive, the pain was more severe, and was felt for three or four hours; but still it was not to be compared in severity with that caused by the caustics previously employed. On the next day, the parts became somewhat inflamed, hot, slightly swollen, covered with a thin discharge, and rather sore, painfully so on movement or pressure; but none of the symptoms were of an aggravated character, and on the fourth day had almost entirely subsided. By the end of another week, every warty growth had disappeared. Throughout the whole treatment by chromic acid, free ablation of the parts after the first twenty-four hours, and a dressing of dry lint, twice daily, were enjoined. No constitutional treatment was pursued. At the present date, two months have passed over without any re-appearance of the disease. It may be well to mention that there was no irritation of the inguinal glands consequent on the inflammatory action set up by the chromic acid, nor were there any symptoms of disturbance in the general health which could be referred to the absorption of the chromic acid into the system. On the contrary, the health improved.

CASE 2.—This, which, with two other cases, may be more briefly stated than the

first, was one of pedunculated warts, seven or eight in number, resulting from previous gonorrhœa, and situated just within the orifice of the vagina. They were all touched with the solution, and disappeared within a few days. Scarcely any pain or subsequent soreness was experienced.

CASE 3.—A youth, suffering from gonorrhœa and balanitis, with slight phimosis, had a dense crop of highly vascular warts upon the prepuce, corona, and glans. After one application of the chromic acid solution, which caused temporary smarting pain, and then a good deal of soreness on being touched, which continued for four days, only a few indurated ridges and flat warty eminences remained. By a second and third application, at intervals of a week, to these particular parts, they were quickly removed. The gonorrhœa was treated simultaneously. No siphilitic signs appeared.

CASE 4.—A man had at the same time an indurated chancre near the frænum, and an abundant crop of warts on all the parts within the prepuce. Mercury was administered internally, and the chromic acid used at intervals with complete success. But there was much soreness, and some swelling and discharge. Sufficient attention had not been paid to the dressing with dry lint, and, owing to the occupation of the patient, his attendance at the hospital was at long and irregular intervals. This case is still under treatment, for a few elevations of the integuments, the bases of previous warts, remain. The chancre, which had also been touched, healed readily.

ART. 122.—*A remarkable case of Hydrocele.* By Mr. M. J. LISTER.

(*Edinburgh Medical Journal*, Sept., 1856.)

This case may be regarded as of no ordinary interest, on account of its very unusual features, if for nothing more. It is by no means common for ordinary hydroceles, even though of large size, to extend fairly into the inguinal canal, though they often reach and even distend the external ring. When such cases do occur, they are sometimes associated with a hernial protrusion, which descends when the fluid of the hydrocele is drawn off; the hydrocele serving as a sort of natural truss for a pre-existing rupture, which, having distended the inguinal canal, permitted the hydrocele to ascend into it. Cases of hydrocele, reaching as far as the internal ring, without concomitant hernia, have, however, been repeatedly observed, although there appears to be no work in which allusion is made to them. In regard to diagnosis, the disease with which it is most likely to be confounded, is congenital inguinal hernia, which, like it, is a more or less reducible scrotal tumor, with the testicle imperceptible. But the evident fluctuation of the contents, the imperfect manner in which they could be returned into the abdomen, and the manifest hypogastric tumor which was produced when reduction was carried to the furthest point, were strong points of distinction from that disorder. Hydrocele being a disease not dangerous to life, the opportunity for post-mortem examination is not very commonly presented, and hence the true nature of large reducible hydroceles is somewhat obscure. The present case shows that they are not to be regarded as necessarily affections of the cord.

CASE.—“The case which forms the subject of the present communication, is, so far as I know, unprecedented in the records of surgery. For the opportunity of bringing it thus before your notice, I am indebted to the kindness of Dr. Keiller, whose assistant at the Royal Infirmary, Mr. W. W. Clark, informs me, that the patient, G. S. by name, æt. 35, a native of Calcutta, had suffered from excessive diarrhœa during a long voyage in an emigrant ship, of which he was himself the surgeon; and, on landing at Liverpool, was in an extremely exhausted and emaciated condition. He proceeded to Edinburgh, where some of his friends reside; and they, being much alarmed at his state of health, placed him in the hospital, on the 14th of December last. He seemed at first to rally somewhat under the treatment that was adopted, but ultimately sank, and died on the 1st of January. Shortly before his death, it was observed that he was affected with a large tumor, occupying both sides of the scrotum. Though very averse to its being examined, or to entering into conversation regarding it, he stated that the affection had existed for several years, and was believed by himself to be hernia, so that he had worn a double truss; and extensive cicatrices in the vicinity of the inguinal canals, led to

the supposition that he had applied it so as to exercise an unusual degree of pressure. From the imperfect examination that the circumstances permitted, the case was supposed one of double hydrocele, with the peculiarity, that on the left side, the tumor extended into the inguinal canal, and a swelling existed above Poupart's ligament, between which and the scrotal tumor a distinct sense of fluctuation was communicated to the hands on alternate pressure.

"*Post-mortem examination*—It was found on dissection, that the mass which distended the scrotum, was part of a single large sac, which, on the right side, had pushed aside the atrophied testicle, and applied itself to the external abdominal ring; while on the left it extended through the inguinal canal, and formed a tumor beneath the peritoneum lining the iliac fossa and lower part of the anterior wall of the abdomen, where it had been seen and felt during the life of the patient. The sac was removed entire from the body, and was now first seen by myself. The fluid which it contained was not sufficient to distend it fully, and it assumed a somewhat flattened form when placed upon a plane surface, having a constriction in the middle, at the part corresponding to the inguinal canal, by which it was divided into two portions—one scrotal, the other abdominal. When pressure was exerted upon either the scrotal or abdominal part of the flaccid sac, a portion of the fluid passed from one to the other, through the constricted part, with a rushing sensation similar to that frequently experienced when the contents of a diffuse hydrocele of the cord have been pushed up into the abdomen, and the pressure is relaxed so as to allow them to descend again.

"In order to make out the true nature of the sac, the first point was, of course, to ascertain its relations with the testicle, which was distinctly to be felt, though much atrophied. I laid open the sac freely at its inferior aspect, giving exit to a large quantity of brownish fluid, containing abundant scales of cholesterine, as is common in old hydroceles, and proceeded to examine its interior. It was lined throughout by a smooth serous membrane, the testicle projecting into the cavity at the part already mentioned, covered by the lining membrane, just to the same extent as it naturally is by the tunica vaginalis; and, in fact, presenting nothing abnormal in appearance, except its small size. It was, therefore, clear that the sac was neither more nor less than a distended tunica vaginalis."

ART. 123.—On the treatment of Bubo. By M. BROCA.

(*Medico-Chir. Review*, Jan., 1857.)

M. Broca observes that a bubo undergoes two stages of development, during the first of which the inflammatory engorgement is confined to the gland itself, this containing a small central cavity filled with semi-fluid pus. In the second stage, suppurative inflammation is propagated to the surrounding cellular tissue; and it is by such extension that the ravages of bubo are produced. The object of the proposed means of treatment is to prevent the production of this secondary abscess, by attacking the bubo during its first stage, and evacuating the pus before this has extended beyond the limits of the gland itself.

M. Broca prefixes some observations upon the diagnosis of the form of bubo that should be so treated, these being based upon Ricord's doctrines. Such bubos are indurated, rounded glands, the skin over which is not discolored, and they have very much the appearance of the indolent bubo met with in the first stage of constitutional syphilis, but which, never suppurating, requires no local treatment. This indolent, *constitutional* bubo is in fact one of the first symptoms of secondary syphilis which follows indurated chancre, and is amenable to mercurial treatment. The *local* suppurating bubo never appears but in glands which are in direct communication with the part that is the seat of chancre, which chancre is never indurated, and never gives rise to constitutional syphilis. It is amenable only to local treatment, and the existence of a glandular abscess is sufficient to conclude that the syphilis is local, and that mercury is inexpedient. When this *local* bubo has reached its stage of complete development, there is therefore no difficulty in its diagnosis; but at first, prior to the propagation of the suppurative inflammation to the cellular tissue, it may be confounded with constitutional bubo. But, as has been stated, this last almost constantly arises from indurated chancre, which is never the case with the local bubo. The constitutional exists on both sides, the

local is often unilateral.' The latter is never accompanied by symptoms of constitutional syphilis, while in the former there are always more or less evident signs of a general infection, which gives rise to other analogous glandular engorgements, and especially at the postero-superior cervical region. The tumor in constitutional bubo is quite indolent, while the other is always more or less painful, especially upon pressure. In the former there are generally a considerable number of glands engorged, which are scattered over the whole extent of the bend of the groin; while in the latter, but two or three glands, placed close to each other, and often only one, are affected. In constitutional bubo the tumor is very hard and entirely solid; but in local bubo it is somewhat less hard, and imparts a sense of fluctuation similar to that furnished by a small cyst with very thick walls. This fluctuation alike differs from that of an ordinary abscess, and from the resistance of solid tumors. It is due to the semi-fluid purulent matter contained in the centre of the gland.

The accurate diagnosis is of importance, as the treatment recommended is applicable only to the local bubo. When the gland has acquired the size of a small hazel nut, it should be firmly fixed by two fingers of the left hand, and a bistoury plunged into its centre. Without letting go of it, the bistoury should be removed, and a grooved director passed in. On employing strong lateral pressure, a small quantity of semi-fluid, ill-elaborated pus is forced along the groove; and the pressure must be continued until the blood comes, so as to secure the entire discharge of this pus. It is rather a painful procedure, and must be repeated on each affected gland. The tumor becomes a little reduced in size, but next day it has somewhat enlarged again, and the small quantity of pus that has again formed must be discharged by passing in the director and using pressure. This must be done every day until the suppuration ceases, or a small fistulous opening has become established for the discharge. In some of his cases, M. Broca has injected tincture of iodine by means of a small syringe, and he thinks this may exert some effect in neutralizing the virulent properties of the pus when this is inoculable. At present but nine cases have been treated by this new mode, no ill effect having resulted in any of them; while extension of suppuration to the cellular tissue, with the consequent ulceration, detachment of skin, &c., has been avoided. In five out of the nine cases, less than a week sufficed for a cure; the other cases requiring twelve, thirteen, thirty-seven, and fifty days; a small fistulous opening alone remaining during that period, in place of the large purulent collection usually observed. This mode of treatment, therefore, even when it does not abridge the duration of the bubo, materially restrains its extension.

Since the above paper appeared, M. Gély, surgeon of the Hôtel Dieu, Nantes, has published an account of some observations he made upon the subject in 1852-3. He states that he has derived great advantage from making punctures with a lancet at an early period, sometimes as soon as the third or fourth day. He introduces no conductor, and employs no pressure, but makes a puncture large and deep enough to allow of a free escape of the pus; and applies a tepid cataplasm if there is much inflammation.

ART. 124.—*On the anatomy and pathology of the Adult Prostate.*
By Mr. HENRY THOMPSON, Assistant Surgeon to University-College Hospital.

(*Medical Times and Gazette*, Feb. 21, 1857.)

These observations are based upon upwards of sixty dissections, fifty of which were preserved and exhibited, the latter having been examined on a uniform plan.

Mode of examination.—The organ has been clearly dissected from adjacent parts. At the neck of the bladder, the muscular and other fibrous structures which surround the vesical orifice of the urethra were pared away pretty closely; some portions may have been left, as it does not appear possible to mark any absolute limit between prostate and bladder; anteriorly, although the same condition exists, it is less difficult to determine, approximatively, a boundary line. It was then measured, in three directions, as follows: from base to apex; in the extreme transverse direction; and in the extreme recto-pubic direction. Next, it was weighed. After this, the urethra was laid open, the existence of "concretions" sought in the canal, and afterwards in various parts of the prostatic substance. In

most specimens, free sections were made with Valentin's knife, and a series of microscopical observations pursued in normal and abnormal conditions of the organ, illustrated by about 100 specimens, mounted on slides, with preservative fluid. The greater part of these prostates were taken from the bodies of elderly persons, as they consecutively appeared in the dead-house of a large institution, containing a due proportion of healthy and diseased lives, and no kind of selection was made. The particulars of age, weight, and measurement, are arranged in tables exhibited. The observations made are presented under the following heads.

I. *On the frequency with which enlargement appears in advanced age.*—The opinion has long been current that the enlargement of the prostate is one of the changes natural to old age. The specimens in question show the incorrectness of this view. Of the 50 specimens, 43 were taken from individuals of fifty years old and upwards. Of these 43, two were very small, probably atrophied, leaving 41. Of these 41, 14 exhibited enlargement, or a tendency thereto, manifested by the presence of tumor, more or less developed. Of these 14, 9 exhibited it in a very slight degree; in the remaining 5 enlargement was considerable, and gave rise to symptoms during life. Only one died of the affection.

Results, per cent.—An appreciable enlargement existed at the rate of 32 per cent; notable enlargement, causing symptoms during life, at that of 12 per cent.

Of the 41 cases above fifty years of age, 29 were therefore unaffected in the slightest degree, and amongst them were the oldest individuals of the series—one at ninety, one at eighty-five, and two at seventy-nine years. It was then held to be established, that enlargement of the prostate, so far from being a change natural to old age, was an exceptional condition.

II. *The size and weight of the adult prostate.*—From the fifty cases of all adult ages, 14 being deducted as enlarged, and 3 as unnaturally small, 33 specimens remained healthy; the average weight of these was 4 drachms 38 grains; there was very little deviation, most of them ranging between 4 and 5 drachms.

Measurements.—Those given by authors generally were corroborated. The prevailing measurements were:—From base to apex, $1\frac{1}{2}$ to $1\frac{1}{4}$ inch; greatest transverse diameter, about $1\frac{1}{4}$ inch; greatest thickness, $\frac{3}{4}$ to $\frac{1}{2}$ inch; measurement from the centre of the urethra, outwards and downwards to the periphery of the organ, the line of section adopted in lithotomy, varied from $\frac{3}{4}$ to $\frac{1}{2}$ inch.

III. *On the nature of a part commonly called the "third lobe."*—The history of this term, and its employment to indicate a distinct portion of the organ, is discussed at some length. An examination of the preparations exhibited does not warrant its use. There is no portion marked out with sufficient distinctness to entitle it to such an appellation. Its existence appeared to have been the subject of discussion during some years in the course of the last century, long before the time of Sir Everard Home, the result of which was then a decided denial to its existence; Morgagni especially, after repeated examinations, strongly opposing its claim to be considered a distinct part of the healthy organ. It was proposed now to term the stratum of prostatic substance, which united the two lateral lobes behind and below the urethra, the "posterior median portion," as more correctly indicating the part referred to, and at all events as not involving assent to the disputable theory which assigned to it an independent character.

IV. *On the existence of distinct tumors in the prostate.*—The existence of solid tumors of different kinds is by no means rare in the prostate. They were pointed out by Sir E. Home, and by him supposed to be of the nature of apoplectic clots. Subsequently they have been regarded as fibrous tumors, and more lately it has been shown that some possess a structure approaching very nearly to that of the secreting tissue contained in the prostatic substance around. It is shown that enlargement of the prostate is very frequently associated with the development, more or less marked, of such growths in some one of three forms; in short, that the production of defined tumor is more frequently than otherwise the essential element of the pathological condition known as hypertrophy of the prostate. Of fourteen enlarged prostates in the series, six exhibited numerous fibrous tumors in the substance of the lateral lobes; the others show polypoid enlargements, single, binary, or multiple, springing from the posterior median portion. The varieties may be briefly noticed as follows:

1. A simple fibrous tumor, small, nearly isolated, made up of closely packed

organic muscular fibres, with some areolar tissue, intimately resembling those found imbedded in the walls of the uterus.

2. A tumor composed of the same elements as the preceding, but containing, in addition, some of the glandular substance of the prostate, more or less imperfectly developed. This also may be imbedded, with or without a cyst, seeming sometimes to partake more of the character of a local enlargement, limited to a small portion or lobule of the prostate tissue, and only partially isolated. Although separating this class from the previous one for facility of reference, it is more than probable that the two nearly merge into each other at their adjacent limits, the latter approximating to the former by insensible gradations; so that some tumors which appear to be purely fibrous at first, may be found to exhibit slight traces, in parts of its structure, of the glandular element. In *all*, however, the basis is *muscular fibre*.

3. A tumor composed entirely of the ordinary structures of the prostate fully developed, and enjoying activity of function in common with the rest of the organ. It assumes a pyriform shape even in its earliest stage, and springs from the posterior median portion. It may vary in size from that of a pea to that of a middle-sized pear. The analogies between these and the tumors of the uterus are considerable. Pointed out by Velpeau and others, modern researches seem to indicate them more plainly.

1. There is a ground of analogy derived from the two organs, prostate and uterus, being undoubtedly morphological equivalents in the two sexes, the analogue of the uterus and vagina combined being found in the prostatic vesicle or utricle of man. Numerous authorities are referred to in support of this view.

2. A stronger ground may be found in the fact, that the prostate and uterus are organs whose bulk is constituted by the same tissue—viz., the organic muscular fibre. No other organ in the body besides these two is similarly constructed by thick masses of this tissue; elsewhere, it is distributed in very thin layers.

3. Both organs exhibit growths identical both in external and histological characters. Isolated tumors imbedded in the substance of the organ, and polypoid outgrowths intimately connected with its structure, are seen in both. The occurrence, in some prostatic tumors, of a very small proportion of partially developed gland-tissue, intermingled with the muscular basis, should be regarded rather as an accident of situation than as indicating any material difference between those and the purely muscular tumors.

4. The two organs are subject to considerable hypertrophic enlargement, mainly consisting of their constituent fibrous and muscular elements, and in both this may be associated with some tumor formation, or may exist independently of it; may, in the latter case, be local or general, affecting the whole or certain parts of the organ, and, when local, affecting particular spots more commonly than others.

5. The two organs are liable to these changes after the prime of life has passed. Bayle, quoted by Rokitsansky, and confirmed by Dr. Robert Lee, says that 20 per cent. of women after thirty-five years, have fibrous tumors of some size in the uterus. These preparations show prostatic tumors in 30 per cent. of males after fifty.

ART. 125.—*Radical cure of Unstrangulated Hernia.* By M. GERDY.

(*Lancet*, Oct. 18, 1856.)

M. Gerdy's operation for the radical cure of hernia has not found much favor in this country; and this coldness can hardly be wondered at when it is recollected that the operation is connected with very serious risks, and has for its object the relief of a displacement which entails, in simple cases, no great inconvenience. There are, however, patients who become tired of wearing trusses (especially as the latter sometimes exercise a very uncomfortable pressure), and they request to be freed, by operation, from a complaint which often embitters life.

It would appear by a thesis, lately defended by M. Amen, at Paris, that the operation is much more resorted to in France than in this country; and Gerdy's statistics are certainly calculated to remove apprehensions as to the danger of peritonitis; for he found only six deaths out of seven hundred operations, two of the six being unconnected with the actual surgical proceedings. We need hardly say that Gerdy's method consists in offering at the ring the resistance of a cutaneous plug, formed by invagination of the skin in the inguinal canal. It is also well known that M. Velpeau obliterates the inguinal apertures by injections of iodine into the sac.

M. Amen gives seven cases treated by these injections; out of these, three were relieved, and four completely cured. The method by invagination was used twice by M. A. Guérin at the Charité, and once by the author himself. After these latter operations, it is important to induce the patients to wear well-made bandages, at least for a twelvemonth; and we perceive that, at the Charité, Mr. Bourjeaud's were considered by M. Guérin to be the best calculated to promote the eventual cure, as they exercise sufficient compression without injuriously distressing or chafing the abdominal walls. It is plain that, in such instances, steel trusses could not be thought of; and perhaps there would be fewer persons desirous of subjecting themselves to the radical cure, if these elastic bandages were more extensively used.

One of the cases treated by injection is worth quoting: a waiter, aged twenty-nine, was admitted under M. Maisonneuve, at the Hôpital Cochin. Hernia, right inguinal, and of six years' standing. He wished for the operation, because the hernia was troublesome, and gave him a great deal of pain. On the 5th of September, 1854, equal parts of tincture of iodine and water were thrown into the sac, and left three or four minutes. Severe inflammation of the parts ensued; but the tumor diminished after the eighth day, and by the fifteenth it was of the size of a walnut, perfectly plugging the ring. Six months afterwards the tumor was of the size of a nut, and the patient made all kinds of exertions and efforts without thinking any longer of his hernia.

One of M. A. Guérin's cases of invagination refers to a man-cook, aged twenty-two. Small inguinal oblique enterocele, six years; habitual pain makes him seek the radical cure. On the 22d of February, 1856, M. Guérin operated by invaginating the integuments to the bottom of the canal, and fixing the skin by a strong thread and bead. Inflammation ran very high until the fifth day after the operation, when the thread and bead were removed. On the sixth of March, fourteen days after the invagination, the ring was obliterated, and six days afterwards the patient left the hospital, with one of Mr. Bourjeaud's elastic bandages, which he is cautioned to wear for some time.

ART. 126.—A rectangular Catheter-staff for Lithotomy. By Mr. HUTCHINSON.
(*Medical Times and Gazette*, Feb. 21, 1857.)

The main peculiarities of this instrument are its rectangular form and its catheter stem. The advantages of its form are—1st, that it made the direction into the bladder straight, and thus obviated all danger of the knife leaving the groove; 2dly, that the angle projecting prominently into the perineum, was more easily found than the curve of an ordinary instrument; 3dly, that its groove commencing only at the angle, there was no chance of the urethra being opened too far forward, or the artery of the bulb being wounded; 4thly, that when once introduced it did not easily change position. Its being a *catheter as well as a staff* is important—1st, because it allowed the surgeon to be quite certain of its being really in the bladder before commencing the operation; 2dly, because it permitted of the bladder being injected without any change of instruments, and thus prevented the risk of the water escaping. It was provided with a stop-cock. The author insists strongly on the importance of operating with a full bladder, and the dangers of its neglect, and believes that one great recommendation of his instrument was, that it would much encourage and facilitate the practice. Adverting to causes of accident in lithotomy, he states, that of a series (nine) which had come under his notice during the last few years, chiefly in the practice of the London hospitals, they had been due to—1st, the knife leaving the groove in the staff; 2dly, the staff being at the time not really in the bladder; 3dly, injury of the fundus of the bladder with the point of the knife; and he expresses a strong opinion that the employment of the "rectangular catheter-staff" would have prevented them all. The instrument has a side groove, and



is adapted for the use of any form of knife the operator might prefer. It has been made by Messrs. Fergusson, of Giltspur Street. It has been tried in the dead-house a great number of times, and once upon the living subject, and always without any inconvenience. There is no difficulty whatever in its introduction. It was advised to be held in the usual way, moderately hooked up under the symphysis pubis, but by a slight movement of the handle its angle might be made to project more or less into the perineum, according to the operator's wish. Mr. Hutchinson wished distinctly to state that he made no claim to originality of design. Dr. Buchanan, of Glasgow, had long ago recommended and used an angular staff for lithotomy, and more recently Mr. Fergusson had devised a grooved catheter for perineal section. The present instrument was merely a combination of the two principles. He believes, however, that it possesses in its catheter stem a very important advantage over Dr. Buchanan's, since it enables the operator to ascertain with positiveness whether he was in the bladder. With instruments of the ordinary curve this is done by striking the stone, but, as an angular one is very inconvenient for sounding, it is liable, when made solid, to the objection that the surgeon might occasionally have to operate in uncertainty. The author describes several other modifications of the angular staff which he had made in the course of a long series of experiments as to the safest instruments for lithotomy. One of these had the groove beneath, and the knife adapted to it was a double cutting gorget, the beak of which was so made that when once placed it could not leave the groove. This he had once used on the living subject without inconvenience; but as it was liable to some objection, and as the side groove allowed of the operation being completed by a single knife and much simplified the apparatus, he had at length abandoned the principle which distinguished the former.

ART. 127.—*On a new method of operating for Impervious Stricture.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Lancet*, March 14, 1857.)

In a former communication (v. "Abstract," vol. XVIII) upon the remedy of stricture by external incision, the author endeavored to show that impermeability was not consistent with the nature of stricture, and that whenever the urine could pass through the urethra an instrument might be made to do so; not perhaps at once and with ease, but always through time and proper management. Though thus certainly permeable while merely contracted, the canal was undoubtedly liable to complete obstruction in consequence of wounds, and also of sloughing, when it had been found to constitute a very troublesome subject of treatment by the operation hitherto employed—viz., cutting upon the point of a catheter passed down to the seat of obstruction, so as to clear a way for its introduction into the bladder—a process rendered difficult by the thickness and condensation of the textures concerned, and also dangerous as well as uncertain by the risk of not cutting exactly in the proper course of the urethra. Two cases of this kind one from a provincial town in Scotland, and another from St. John's, New Brunswick, in both of which not a drop of urine passed through the urethra for many months, the urethra being completely obstructed to the introduction of instruments—having lately come under the author's care at the same time, led him to reconsider the subject, and devise the following plan instead of the one usually employed, which, for the reasons just mentioned, he was unwilling to adopt. An instrument like the common lithotomy staff, with a groove on its concave instead of the convex side, being introduced through the fistulous opening of the perineum, and confided to an assistant, the guide director employed for the division of strictures by external incision might be passed down to the seat of obstruction, and while the staff was supported by pressure upon the perineum to thrust through the opposing substance in the course which it ought to take if the canal were free, enter the groove, and so pass into the bladder, when the state of matters would be similar to that of a stricture requiring division after having the director passed through it, so that the operation might be completed in the same way as upon such an occasion. This procedure was executed in both cases, without any difficulty in one, and without more in the other than might have been expected from the extreme degree of injury which the patient had sustained by falling twenty feet, fracturing the pubis, having the

bladder punctured, &c. &c. The first patient was dismissed from the hospital perfectly well at the end of seven weeks after the operation; the second, passing urine in a full stream, but in general only by drops through the perineum, appears also to have the prospect of complete recovery at no distant date. While quite aware that the formation of a new urethra is much less promising in its result than the enlargement of an old one, the author expressed his hope that the method which he had proposed would facilitate the procedure, and lessen the risk of its bad consequences.

ART. 128.—*On the treatment of Stricture of the Urethra, Rectum, &c., by means of certain guides and tubes.* By Mr. THOMAS WAKLEY, Surgeon to the Royal Free Hospital.

(*Assoc. Med. Journ.*, Nov. 29, 1856.)

It is now five years since Mr. Wakley brought under the notice of the profession his system of treating urethral stricture. At that time, the difficulties and dangers attending the ordinary methods pointed out the necessity of devising some new plan. At first, the expectations entertained by Mr. Wakley as to the success of his method were founded on theory: but since that time, the instruments have been extensively tested by experience; and the author states that in only one instance, which had come under his care, among a very large number, had he been foiled in introducing his instrument. The apparatus has also been used by many surgeons of eminence, who had spoken favorably of the plan. The author then proceeds to describe the instruments as consisting of a series of guides to be passed into the urethra, of straight tubes to be passed over the guides, and of elastic catheters to be passed over the guide when the tube has been withdrawn. The ordinary methods of treatment followed by other surgeons were not to be depreciated; but the author's opinion is, that in forty-nine cases of stricture out of fifty, where an instrument could be introduced, the use of cutting instruments and caustics might be dispensed with. The mechanical power which the tubular system afforded was very great; but it was not at all to be compared with the plan of forcible catheters as advocated by some French surgeons. With the guide and tubes dilatation can be effected most carefully and efficiently. Before the application of the instruments, the patient should submit to a preparatory treatment for two or three days; and his urine should be examined as to its specific gravity, the presence of pus, mucus, &c. Water-cushions filled with hot water should be applied to the pubic region. A guide having been passed, a tube is glided over it; the tube is then withdrawn, and an elastic catheter is passed over the guide. This tube is then withdrawn so far as to leave only a small portion within the bladder. On this point, Mr. Wakley insists rather strongly, as he had known dangerous and even fatal effects to arise from the contact of the end of a catheter with the posterior part of the viscus. The catheter may be removed in twelve hours, the guide having been previously introduced. A cure may be effected by this plan in seven days: but it is safer to extend the treatment over a fortnight. The advantages attending this system of treatment are stated by the author to be the following:—The rapidity, safety, and certainty, with which the stricture is removed; the permanency of the relief afforded; the avoidance of false passages; the control which is obtained over the urethral canal; the great relief to the patient; the establishment of the flow of urine, and the facility with which the bladder is emptied; and the avoidance of the application of caustics or similar measures. Most complicated cases of stricture might be successfully treated in this way. It was often necessary to use great patience, and to persevere for days even until the instrument could be made to enter the bladder. Mr. Wakley then briefly points out that the same plan of treatment might be applied to non-malignant strictures of the œsophagus and rectum, and to dilatation of the cervix uteri.

ART. 129.—*The results of one hundred Lithotripsy Operations.*

By Dr. V. v. IVANCHICH.

(*Wien Wochenschrift*; and *Med-Chir. Review*, April, 1857.)

In this paper Dr. v. Ivanchich, of Vienna, furnishes a chronological list of 100 cases of lithotripsy that have occurred to him, giving the name of each patient, and

a very short summary of the particulars of his case. The following are the conclusions he arrives at from a general view of the whole number. 1. The ages were as follows:

18 and under 20	.	.	.	.	.	.	4
20 " 30	.	.	.	.	.	.	1
30 " 40	.	.	.	.	.	.	3
40 " 50	.	.	.	.	.	.	9
50 " 60	.	.	.	.	.	.	31
60 " 70	.	.	.	.	.	.	35
70 " 76	.	.	.	.	.	.	17

2. There were 3 females, and 97 males. 3. Of the 100 patients, 87 recovered, and 13 died. Six of the recoveries, owing to the presence of other important complications, were incomplete; complete recovery, therefore, taking place in 81. Eight of the 13 deaths were due to fatal causes foreign to the operation, so that but 5 of these actually ensued from the operation itself. 4. The calculi in 5 cases were composed of oxalate of lime; in 4, the nuclei were of uric acid, and the exterior phosphatic; in 31 there were phosphatic, and in 60 uric acid calculi. 5. The *stancias* averaged about 8. 6. The mean duration of the lithotriptic treatment was thirty-six to thirty-seven days. 7. The greatest weight of the calculous mass that was removed exceeded 32 drachms (8 Loth); the least amounted to a drachm. 8. Among the 100 cases there were 10 single and 2 double relapses. 9. Fifteen of the operations were performed under partial or complete narcosis, verifying the correctness of the conclusions drawn by the author in his essay upon the advantage of inducing narcosis in lithotripsy. 10. The patients were natives of the following countries:—32 Austria, 32 Hungary, 5 Bohemia, 4 Moravia, 4 Servia, 4 Hamburg, 3 Bavaria, 3 Russia, 2 Croatia, 2 Saxony, 2 Prussia, 1 Galicia, 1 Italy, 1 Sclavonia, 1 Dalmatia, 2 Hanover, and 1 Moldavia.

(C) CONCERNING THE UPPER EXTREMITY.

ART. 130.—*Reduction and dislocation of the Humerus by manipulation without extension.* By Mr. WORMALD, Assistant-Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, Feb. 7, 1857.)

In a case recently under his care in St. Bartholomew's, in which a very fat woman was the patient, Mr. Wormald succeeded in reducing an old (six weeks) dislocation of the humerus by manipular movements, without extension, on the principle now almost universally adopted with those of the femur. The humerus differs from the femur in having an almost straight shaft up to its articular end, and no leverage can therefore be obtained, as in the case of the head of the femur, which is almost at right angles to its shaft. By bandaging a rectangular splint to the arm and forearm, Mr. Wormald made the latter into a lever, by which to act upon the former. The operator's knee being put under the patient's elbow as a fulcrum, the forearm was depressed, and the bone lifted into its place. The patient was under chloroform, and reduction occupied only about ten minutes. For ordinary cases this plan will, of course, not supersede the very simple and effectual ones already in use, but in those difficult of reduction it is worth being had recourse to.

ART. 131.—*On resection of the Elbow-joint by a single long incision.* By Mr. PAGET, Mr. FERGUSON, and Mr. ERICHSEN.

(*Medical Times and Gazette*, Dec. 13, 1856.)

The adoption of the single incision in resections of the elbow-joint, which has been done almost simultaneously by three of our London surgeons, appears to be an important simplification of the former methods. It has been repeatedly shown on the dead subject since 1853 by Mr. Spencer Wells. The old plan, and that yet used by many surgeons, was by incisions in the form of the letter H; then it was found that the long cut on the radial border of the joint might be dispensed with, and that a J-shaped one gave ample room. The last improvement, and one for

which we are indebted to Langenbeck, is the omission of the cross cut also. The last-named surgeon has for many years been accustomed to operate by means of a single long incision on the inner edge of the ulna, and asserts that the lateral separation of the soft parts thus afforded gives ample space for the operation, while, as must be apparent, it leaves the bones much better covered, and the wound a much smaller one than would otherwise be the case. A house-surgeon of M. Langenbeck's, being in London, visited most of the hospitals, and mentioned to the surgeons his preceptor's practice; hence its adoption early last October by three surgeons within a week or two of each other. Mr. Paget was, we believe, the first. His case was that of a young man whose left elbow was the seat of old disease. There were large scars of former incisions, numerous sinuses, from which the discharge was profuse, and very great thickening of the soft parts. The ligaments and other structures around the joint were all in a pulpy condition, and no division of them with the knife was required. The ends of the diseased bones were readily turned into the wound, and sawn away with a key-hole saw, cutting from before backwards. The incision was necessarily a long one, and from the infiltration of the soft parts, much gaping of the wound occurred, but not nearly so much as there would have been had the transverse incision been practised. The case is doing well, the swelling is subsiding, and the healing process slowly progressing. Mr. Fergusson's patient was a girl, aged 11, the operation being done on October 4th. The disease was of eight months' standing; there were several open sinuses, and much surrounding thickening of parts. The healing was rapid, and is now nearly complete; fair motion having been obtained. Mr. Erichsen's patient was an old man of 63, whose left elbow had for six years been the seat of disease. Some pieces of necrosed bone had been removed; but the disease persisting, it was determined to resect. The operation was done on October 16th, and in spite of two attacks of erysipelas, the healing was going on most rapidly. At present, excepting one very small sinus, it is complete. The man is able to go about, and is much improving in health. The elbow has fair motion, and all thickening of the parts has subsided. We may add, that in these cases the operators all express themselves as highly pleased with the new mode of operating, and quite intend to employ it in future cases. There can be little doubt but that in the latter two cases, the last especially, the healing process has been very much more speedy than it would have been had a transverse incision also been made.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 132.—*On excision of the Hip-joint.* By Mr. ERICHSEN, Surgeon to University College Hospital.

(*Lancet*, March 28, 1857.)

"If," says Mr. Erichsen, in a recent clinical lecture, "we look at the hip-joint in a surgical point of view, we shall see that it is composed of three distinct parts—viz., the soft joint-structures, the head of the femur, and the acetabulum. Now, any one of these divisions of the joint may be primarily and even separately affected; and we may accordingly divide hip-joint disease, or coxalgia, into the three varieties of *arthritic*, *femoral*, and *acetabular*. This division is not only a pathological arrangement, but it is of a truly practical nature, having a special bearing on the question of excision.

"1. *Arthritic hip-disease.*—This is usually an acute inflammatory affection, attended by those local signs and constitutional symptoms that are characteristic of deep-seated and severe articular inflammation. The joint becomes hot and swollen, and is exquisitely sensitive; in fact, the pain that the patient suffers is more severe in this than in any other form of arthritis with which I am acquainted. The sufferings are greatly aggravated at night, and by the startings and convulsive twitchings that occur in the limb when the patient falls to sleep. It is impossible to move the patient, the slightest disturbance—merely laying the hand on the limb, or even touching the bed, or shaking the room by walking heavily across it—brings on paroxysms of intense pain. This variety of the disease chiefly occurs in young adults, often arises from exposure to cold and wet, and usually terminates in anchy-

lisis without suppuration. Abscess may form, and dislocation of the head of the femur take place; but this I believe to be rare, and not to occur unless the bones become secondarily implicated.

"The treatment of this form of the disease is simple. It consists in the administration of calomel and opium, with leeches to the hip, fomentations, and perfect rest. In the early stages a splint cannot be borne; but as the disease advances, it becomes necessary to apply one; and then this should be done under the influence of chloroform. Indeed it is not unfrequently necessary to give chloroform in order to change the sheets, or attend to the cleanliness of the patient, so great is the suffering produced by change of position.

"In this variety of coxalgia, excision is not necessary: under proper management the head of the bone may always be brought into or kept in sufficiently good position for ankylosis to take place, so that a straight and useful limb may be left.

"In this case you will see all the leading features of the acute *arthritic* form of hip-disease. Its occurrence in a young adult, its rheumatic origin, the severity of the attendant inflammation, the acuteness of the suffering, and its termination by ankylosis without suppuration, are all characteristic signs.

"Before leaving this part of the subject, I wish to say a few words about the ankylosis that occurs in these cases. When this is *complete*, the osseous structures being fused together, I believe that no attempt should be made to restore the mobility of the limb. I have heard of surgeons cutting down upon and sawing across the neck of the femur, but I cannot think that such an operation is expedient, and would not advise you to attempt it. In this form of ankylosis the limb is usually everted, but not much shortened, and the patient soon walks readily and with little stiffness, owing to the increase of mobility that takes place in the lumbar spine, and which makes up for the rigidity of the hip.

"When the ankylosis is *incomplete*, much may, however, be done to restore the utility of the limb. In these cases, the head of the bone may continue in the acetabulum, and then there is no shortening, but merely adduction of the limb and some flexion of it, the patient being unable to bring the heel to the ground. You will recollect seeing a case of this kind brought into the theatre about six weeks ago, in which I successfully adopted the same plan that we have so often advantageously employed in cases of contracted knee, viz., forcibly extending the limb under chloroform.

"If dislocation of the head of the bone on to the dorsum ilii has occurred without previous suppuration, reduction may sometimes be effected. Two or three years ago, a woman was under my care at the hospital in whom this had happened, owing to softening and destruction of the ligaments of the joint. We, however, effected reduction under chloroform. We had great difficulty in retaining the head of the bone in the acetabulum, and as she one day fell and broke her thigh, we were obliged to desist from further attempts. The case, however, illustrated the fact, that in some cases of spontaneous dislocation in hip-disease, reduction may be accomplished.

"2. The *acetabular* form of hip-disease differs widely from the last variety of this affection. In it the primary seat of disease is the pelvic bones, and the joint becomes involved secondarily by the implication of the acetabulum. This variety of the disease chiefly occurs in adults, always goes on to suppuration, never to ankylosis, and is, I believe, invariably fatal. It usually commences with abscess in the iliac fossa, or at some point within the pelvis. This abscess may descend by the side of the rectum, or pass out through the sciatic notch, under the gluteal muscles, or may find its way under Poupart's ligament, on to the fore part of the thigh. At first there is usually no pain in the hip; but after a time the joint becomes tender, the pain increases, and at last becomes severe. Motion of the limb is impossible. There is neither shortening nor elongation except at the later stage, when possibly the head of the femur may slip through a carious cavity in the bottom of the acetabulum into the pelvis. Death eventually occurs from hectic. On examination, the pelvic bones will be found more or less extensively necrosed; the acetabulum is carious, rough, and probably perforated; the head of the femur, which is lying in this cavity, is deprived of its incrusting cartilage, and is more or less eroded, but in a much less degree than the acetabulum and neighboring pelvic

bones, especially the ilium. Large intra-pelvic abscesses and extensive sinuses will also be met with.

"The treatment of this form of hip-disease is in the highest degree unsatisfactory. The patient's powers must be kept up, but he will eventually sink from hectic. Excision of the hip-joint is of course not practicable, on account of the amount of osseous disease and the extensive implication of the pelvic bones.

"3. The *femoral* form of coxalgia is that variety of the disease in which the head of the femur is primarily affected by caries, often of a tuberculous character, the articulation becoming secondarily involved by extension of diseased action from the osseous structures. It occurs in strumous children, is usually subacute for a time at least, and is attended by the early formation of abscess. The collection of pus that forms around the joint will sometimes present in the gluteal region; but in other instances, as in two patients in whom I have excised the head of the femur, the abscess will pass down under the fascia lata and tensor vaginæ femoris until it reaches the outer part of the middle of the thigh, where it points, and where sinuses are established. After the disease has continued in a subacute form for some time, symptoms of active arthritic inflammation will often set in; the joint becomes destroyed, and the carious head of the bone is dislocated upon the dorsum ili, where it lies in a suppurating cavity. In favorable cases, the abscess gradually contracts, the carious bone is thrown off, and false but firm ankylosis of the head of the femur in its abnormal position takes place. In other cases, however, the caries is progressive, profuse discharge is kept up, hectic sets in, and, unless the source of this mischief is removed by excision, the patient will soon sink exhausted.

"In this form of the disease the pelvic bones are not usually implicated—never primarily; and if they become so as the affection advances, it is by the extension of the morbid action to other osseous structures than the head of the femur. In the great majority of instances the cartilaginous incrustation of the acetabulum is removed, and its place is taken by a fibroid fungous growth, which fills up the cavity. This fungoid mass is analogous in structure and appearance to the plastic deposits that we see thrown out in other joints after the destruction of the incrusting cartilage of bones, and is evidently an attempt at repair set up in the articulation.

"The characteristics of the *femoral* form of coxalgia, then, are—the occurrence of the disease in children; the subacute character of the affection in its early stages; the sudden aggravation of the symptoms; the formation of extensive abscesses; followed by dislocation of the carious head of the bone on to the dorsum ili, and the absence usually of all disease, certainly of all primary disease, in the pelvic bones.

"It is in this form of hip-disease alone that operation is a proper procedure, when Nature fails in throwing off the carious bone, and in establishing ankylosis between the remains of the head of the femur and the dorsum of the ilium on which it is lying.

"The following case in which we lately performed this operation, illustrates well some of the points first adverted to:"

CASE.—*Tubercular disease of the head of the left femur*.—William W—, æt. 7½, was admitted into University College Hospital on Monday, the 22d of December, 1856. His father, a sawyer, is strong and healthy; but his mother died of consumption, aged twenty-six. About the Christmas of 1853, he went to live with his grandmother, in Sussex, and is described as being a very fine healthy boy. While there, he fell from a donkey, soon after which he began to walk lame; he suffered also from measles, which were followed by hooping-cough; and he became greatly emaciated and very lame.

In October, 1854, he was admitted into University College Hospital, where he remained for about six weeks. His general health deteriorated, but his lameness improved, so that he was able to walk with crutches.

At the end of January, 1855, he became an out-patient at St. Bartholomew's Hospital, where he improved, with the use of tonics and putting the limb in splints.

In April, 1855, he became an out-patient at the Royal Orthopædic Hospital, and remained under the care of the surgeons of that establishment for fourteen months.

In April, 1856, he was able to get to school with crutches, and get upstairs and down without assistance.

December 15th.—Mr. Erichsen opened a large prominent abscess over the head of the left femur, and a large quantity of cheesy-looking matter and healthy pus escaped. Rest, iron, cod-liver oil, and poultices were ordered.

22d.—Admitted into University College Hospital. He is very weak and emaciated; sweats profusely at night, though in the daytime skin is dry, harsh, and scurfy. His appetite is pretty good; tongue clean, rather red at the tip and edges; thirst more than natural; the stools healthy and regular every day. There is slight cough, from which he has not been entirely free since 1853. There is extensive dullness on percussion both under and above the right clavicle; the respiratory murmur is here harsh and deficient, and the expiration prolonged. The left leg is shortened about two inches and a half. Over the hip-joint is a prominent swelling; the skin over it is red and excoriated, especially round two openings situated at the upper and outer part of the thigh. On introducing a probe about two inches through these openings, it is found that they both impinge on dead bone, situated above the back of the acetabulum. On rotating the thigh, its head is found to be on the back of the ilium. The thigh is flexed on the abdomen, and the leg on the thigh, owing to the contraction of the ham-string tendons. He always lies on his right side, with the body bent forwards. Cod-liver oil, one drachm, three times a day, with meat and wine.

26th.—An abscess was opened by a small incision at the junction of the upper and middle third of the thigh, to the outer part, giving exit to four ounces of laudable pus.

Jan. 1st, 1857.—The purulent discharge from the abscess and the night sweats more profuse. The appetite and strength are materially diminished. Continue diet and oil, with four ounces of wine.

7th.—The boy being under the influence of chloroform, Mr. Erichsen passed a probe through the upper wound, and found the head of the bone carious, and lying on the dorsum of the ilium, close above the acetabulum. He then made a T-shaped incision over the head of the bone, and divided the fibrous structures which held it *in situ*, and then the head being well pushed out of the wound, and the soft parts guarded by an assistant, he cut through the trochanters, from within outwards, by means of Butcher's saw; a very small portion of carious bone was gouged from the brim of the acetabulum. Three small arteries were ligatured. One suture was put into the lower part of the wound, and the whole dressed with wet lint. The limb was put upon a long splint, bracketed over the wound, but the leg could not be quite straightened, owing to the contraction of the hamstring tendons.

14th.—The patient's general health seems better; he is cheerful, and takes his food with relish. The discharge from the wound is profuse, but healthy. The ligatures came away on the third day, the suture on the first. To-day, the splint was reapplied, the child being previously put under the influence of chloroform, which easily affects him, but makes him feel sick all the rest of the day, and his head throbs severely.

21st.—The boy is improving slightly in general condition; the discharge is profuse; a small collection of pus was let out close to the wound; the splint was reapplied. The leg is now quite straight, the rigidity of the hamstring tendons having altogether passed off. Charcoal poultices have been used from the day following the operation, and are to be continued.

28th.—The boy has greatly improved since last report. He sits up in bed, takes his food well, and the discharge is but trifling, the wound looking clear and granulating healthily.

ART. 133.—*On the American Splint for Fracture of the Femur.*

By P. B. MANSFIELD, Assistant-Surgeon, R.N.

(*Dublin Hospital Gazette*, March 15, 1857.)

This form of splint is extensively used throughout the United States, in cases of fracture of the femur. Mr. Mansfield writes as follows:

"A long splint, something narrower than Dessault's, well padded, and fitted exactly as a crutch, extends from the axilla five or six inches below the exter-

nal malleolus. It is confined in the usual way, to the body, by a very wide duck belt.

"On the inner side, a shorter splint extends from the perineum, where it fits most exactly and easily, downwards, to the same distance below the foot as the outer splint.

"These splints are connected by three thin iron bridges, capable of being bent, so as to allow of the splints being approximated, when necessary, or of being drawn apart, to give room for opening the Scultetus bandage, in cases of compound fracture. They also (a point of great importance) form an excellent cradle, and protect the leg from pressure of the bed-clothes, as well as support it.

"At the *ends*, the splints are connected permanently by means of 'a cross-piece,' which keeps them wide enough apart to prevent pressure on either ankle, and to allow space enough for padding, of which there is an ample supply inside each splint.

"A wide strap of adhesive plaster (spread on strong duck) is applied to the leg (before the bandage), commencing at the knee-joint, on either side; it is continued downwards, and leaving a *loop* of two or three inches under the sole, is taken up on the other side, to the point corresponding to that from which it started. This loop, when the splint is adjusted, should reach to within three or four inches of the 'crosspiece,' around which, and through the *loop*, is passed a piece of bandage; this being knotted, draws the 'loop' as near the 'crosspiece' as possible.

"A piece of wood, to form a handle, is now placed between the piece of bandage and the 'crosspiece,' which an *assistant*, twisting, and using traction at the same time, causes the bandage to shorten so much, that a gentle and steady extension is made, while the surgeon coapts the fractured parts with great facility, and but little pain to the patient.

"The handle can be easily prevented from untwisting, by simply tying it down on the 'crosspiece;' and even if, by the stretching of the plaster or bandage, the leg should shorten a little, a few *twists* of the handle will set all to rights again, without any trouble. I might suggest that a plain leathern *strap* and *buckle*, passed round the 'loop' and 'crosspiece,' with a good number of holes, placed near each other, might be substituted for the handle and bandage.

"Being, I may say, comparatively unknown at home, its novelty, as well as utility, and means of comfort to the patient, may make it a not unsuitable subject of a notice. The points in its favor are, that it makes 'extension' and 'counter-extension' easy, certain, and attended with very little pain, whilst coaptation can be nicely performed; all this is accomplished almost at *once*, and effectually, and frequent disturbance is rendered unnecessary. Lastly, extension is made from the *entire* leg, instead of the *inset*; the 'crosspiece' protects *both* ankles from pressure; and the axilla, becoming a *second* fulcrum, relieves the perineum to a very great extent.

"I have seen five cases turn out very creditably; and have no doubt that if introduced into our own hospitals, in a short time, having undergone, probably, many little improvements, it would become a favorite mode of treatment."

ART. 134.—*Case of Amputation through the Knee for chronic disease of the Joint.* By Dr. MARKOE, Surgeon to the New York Hospital.

(*New York Journal of Medicine*, Nov. 1856.)

Commenting upon this case, Dr. Markoe says, "However highly we may estimate the advantages of this amputation in certain cases, it is not contended that it is applicable to all, and perhaps not even to the greater part of cases of the knee-joint disease. There is no doubt that many such cases are and always will be most safely and most wisely treated by amputation through the thigh. It be comes, therefore, a matter of importance, that we should be able to discriminate between those suitable for, and those not admitting of, this operation. In the absence of large experience on this point, I would suggest the following as cases in which the attempt to save the end of the femur is contra-indicated:

"1st. All those cases in which the spongy extremities of the bone are suspected to be primarily diseased, as is known to be frequently the case in young scrofulous subjects. We have several specimens in our museum, showing that in these cases

the whole expanded extremity of the femur has become softened, infiltrated with the products of unhealthy inflammation, and therefore probably unfit to bear the violence of the saw, and unable to recuperate soundly after such violence had been inflicted. Closely allied to these, in their destructive effects upon the bone-tissue, are those cases in which disease commences, in young persons, in the cartilaginous substance joining the epiphysis to the shaft of the femur. Of this we have also preserved at least one specimen in our collection, and many more have been observed. It becomes in these latter cases an interesting question, whether the operation here advocated might not be so modified as to make a separation of the bone at the point of junction between the diseased epiphysis and the shaft, thereby leaving a somewhat expanded extremity to the femur, on which some pressure could probably be borne.

"2d. All those cases in which the synovial capsule is very much distended, and the coverings of the joint thinned. It is well known that this distension of the synovial capsule is of much less frequent occurrence than was formerly supposed. It does, however, sometimes occur, as in cases where destructive inflammation has followed injuries to the joint, and in some rare instances of idiopathic synovitis passing on to suppuration. The capsule is sometimes distended, as in a case recently dissected, by a large quantity of the curdy precipitate which forms so common an element in strumous pus. This custard-like substance, which is, without doubt, aplastic fibrin infiltrated with pus-globules, sometimes distends the capsule to its utmost capacity, without there being present any proper pus or even any serum sufficient to give the mass less than a semifluid or jelly-like consistency. In all these cases, the unfavorable circumstance is, that the distension, from whichever cause it may occur, acts principally upon the reflection of the synovial sac which lies under the tendon of the extensors of the leg, and not only thins and disorganizes the integuments covering it, but presses the sac up the thigh, so as to form a large diseased pouch, which must necessarily be left behind in the amputation at the joint.

"3d. All those cases in which large or numerous abscesses have taken place round the joint, undermining the skin, and thereby unfitting it to form part of the flap. Observation has shown us, that the suppuration which occurs in the later stages of these diseases, is almost invariably outside of the synovial capsule, having at first no direct communication with its cavity; and that in those cases where the joint is most enlarged, and fluctuates most markedly, the synovial cavity is found to present the same alterations as in those where there is less enlargement and no fluctuation, that the difference is found to consist in these large extra capsular and most commonly subcutaneous abscesses. These abscesses must necessarily be very disadvantageous to the result of any operation performed through them. Their independence of the synovial cavity, however, gives rise to this practical suggestion. Open them early and freely, and though by so doing we may not in any degree ameliorate the primary joint-disease, yet we may sometimes hope to save the patient the pain and the exhaustion consequent upon large suppuration, and we may preserve the integuments round the joint in a condition of soundness to warrant an amputation at the knee.

"These three classes of cases seem to me to be those in which the operation in question is most evidently contraindicated. There are, however, no doubt many other less obvious conditions of the joint bearing upon the question of amputation at the knee or through the femur, which can only be fully appreciated after farther and carefully considered experience."

The case is as follows:

CASE.—Catharine S—, æt. 22, was admitted into the New York Hospital, September 11th, 1856, with a chronic affection of the left knee-joint. She said that her disease had commenced about three years before, in consequence of a blow received upon the front of the patella which had been followed by a chronic inflammation, from which the joint has never since been entirely free. The disease of late has increased so much in severity as to disable her entirely. The joint presented the usual appearances of chronic inflammation of the synovial membrane, and as such it was treated by local depletion, counter-irritation by blisters and issues, with absolute rest, and careful attention to her general health. She

received no benefit from our treatment, nor were we able to give her any considerable relief from her sufferings. The pain in the joint became nearly constant, much aggravated at night so as to prevent her from sleeping, and much increased by the slightest motion of the limb. The whole joint, by the end of November, had undergone a change in its appearance. It was uniformly swelled on all sides, firm to the feel, superficially not tender to handling, but deep pressure giving a great deal of pain. The patella was rigid and fixed in its position. There was no manifest fluctuation, and no evidence of suppuration external to the joint. The integuments were sound excepting the scars of two issues, which by accident had been placed immediately over the joint, instead of a little distance from it. Her general health was remarkably good for one who had suffered so much and so long. Discouraged by the failure of treatment, and worn out by pain and want of sleep, she begged to have the limb removed; and on consultation, seeing no prospect of a cure, it was determined to accede to her request. The soundness of the integuments, and the moderate distension of the joint, seemed to make this a favorable opportunity for trying Syme's amputation at the knee-joint, and, with the approbation of my colleagues, it was accordingly performed on the 3d of November, 1855. The operative procedure differed entirely from that recommended by Mr. Syme, and adopted by Mr. Fergusson. In fact, I proceeded precisely as in amputating through the healthy knee-joint, by making a long anterior flap and a short posterior one, and disarticulating by cutting the crucial and lateral ligaments, after dividing the ligamentum patellæ close to the patella. A small quantity of thin curdy pus flowed out, on opening the joint. The whole synovial surface was found inflamed, thickened, and secreting thin pus, which did not, however, exist in quantity sufficient to distend the capsule. The articular surface of the femur was found denuded, to a considerable extent, of its cartilage, with irregular erosions of the bone, and with several fragments of its compact covering necrosed and buried down among the ulcerated hollows of its surface. The patella was denuded in one spot of its cartilage, and was so far diseased that it was thought best to remove it. In doing this, it was noticed that the synovial cul-de-sac above the patella was much thickened and degenerated, and it was accordingly dissected out entire, a proceeding which was accomplished very easily, the firm and thickened condition of the membrane giving great advantage in seizing it for dissection. This left all the structure in front of the joint sound, though some portions of diseased synovial tissue were left behind and on either side. The surface of the condyles of the femur was then sawn off, and smoothed and rounded with the bone forceps, so as to present as broad and even a surface as possible on the face of the stump. The wound was brought together with five or six sutures, and dressed with cold water. Seven or eight ligatures were employed.

She slept badly the night after the operation, suffering much pain in the stump. I found it next morning very much distended with coagulated blood. The stitches in the middle of the flaps were cut, thereby relieving the tension and allowing the blood to flow out; and as there seemed no disposition to further hemorrhage, a large poultice was applied to hasten the separation of the coagula. Some oozing occurred next evening, which induced the house-surgeon to take off the poultice, and apply cloths wet with very cold water, and to remove the remaining stitches.

Nov. 8th.—No further bleeding has occurred. The flaps are gaping wide apart, and beginning to suppurate, the clots having mainly broken down and come away with the commencing suppuration. The edges of the wound were now brought together with adhesive plaster, dressed with unguent. peruv., and supported by a light bandage. Her general condition is good, tongue clean, relishes her food, sleeps well, and is in fact, free from constitutional irritation. She is able to hold up her stump herself to be dressed, which, in the unwieldy condition of the heavy, gaping flaps, has proved a great advantage.

The wounds healed gradually and soundly by granulation, without any exfoliation of bone, or any other unfavorable symptom. The stump, when healed, presented a somewhat irregular and puckered scar, which, however, lay behind and between the two condyles, in such a manner that the face of the stump presented no cicatrix, where the pressure on the artificial limb would be borne. She tried for a week or two, before going home, a peg leg with an air cushion, and for a

recent stump it was found to bear the pressure extremely well. She left the hospital May 19th, 1857.

ART. 135.—*On excision of the Knee-joint, &c.* By Mr. BUTCHER,
Surgeon to Mercer's Hospital.

(*Dublin Quarterly Journal of Medicine*, Feb. 1857.)

This is Mr. Butcher's second memoir on this subject. In it he details the cases operated on since his first memoir (v. "Abstract," Vol. XXI), and he introduces a few cases which he had overlooked when this memoir was published. The cases related are fifty-one in number, ten ending fatally, and seven requiring amputation of the thigh subsequently. The whole subject is carefully examined, and the practical surgeon will, we are sure, thank Mr. Butcher for bringing this large amount of evidence together. We refer to the memoir itself, which is published separately, for special information, merely noticing the answers which Mr. Butcher supplies to two very important questions.

Mr. Butcher asks :

1. *Does an error in diagnosis, as to the suitableness of a case for excision, debar the patient from the likelihood of cure by amputation?* Certainly not. The patient is insensible, and, therefore, suffers no prolonged shock; and if the bones are found extensively diseased, I would say, to the terminations of their expansions, amputation should be performed at once; otherwise, if life be preserved, the limb would only be a useless appendage. Now, I shall bring to bear upon this point a very interesting case by Mr. Hutchinson, Surgeon to the Metropolitan Free Hospital, and detailed to the Pathological Society of London. A boy had been subject to chronic disease of the right knee for four years; until within a month of the operation, no abscess had ever broken externally. When placed under Mr. Hutchinson's care, the history was—that for the last six months the joint had been getting much worse, and that the boy's health was failing. Believing the case a suitable one, Mr. Hutchinson advised an excision of the joint. In the performance of that operation, the following condition of parts was found: the articular cartilages were everywhere removed, and the opposed surfaces of bone, except where united by adhesions, were in a state of caries. There was a deep ulcer, extending into the patella, the cavity of which would have contained a filbert. In the left side of the head of the tibia was a cavity, into which, for the depth of half an inch, the first joint of the finger entered easily. The condyles of the femur having been sawn away, two patches of yellowish material, infiltrated into its cancellous tissue, were seen; and also the cavity of an ill-circumscribed collection of pus. A second slice of the bone having been removed, a nearly similar condition of things was still found—a small abscess lined by tough lymph, and capable of holding a small nut, having been opened. It was thus made evident, that unless by shortening the limb to an extent which would make it useless, it would be impracticable to cut away all the diseased bone, and amputation was accordingly decided on and performed. Mr. Hutchinson remarked, that the pathological interest of the specimens consisted in their showing several distinct abscesses in the bone, and in the circumstance that the existence of them had not been rendered probable, by the severe pain usual in such cases. With regard to the operations, he believed that, although it had not been deemed wise to persevere with the excision, *his patient had lost nothing whatever by the attempt made to save his limb.* He had been, throughout its performance, in complete insensibility from chloroform, and *within six hours afterwards was in as good a condition as he could possibly have been after amputation only.*

"As to the second question—*Is amputation likely to be successful when performed some days after excision, owing to some unfortunate circumstances having arisen?*—The cases in the foregoing report answer in the affirmative. In seven instances amputation of the thigh was performed, and all made rapid recovery, save one. How satisfactory this return as contrasted with the result of the wholesale lopping off of limbs."

ART. 136.—*Case of dislocation of the head of the Tibia forwards upon the thigh-bone.* By Dr. S. GROSS, Professor of Surgery in Jefferson College, Philadelphia.

(*North American Medico-Chirurgical Review*, March, 1857.)

CASE.—A very large fat woman, weighing nearly two hundred pounds, married, and forty-eight years of age, while engaged in feeding her poultry, sustained a severe fall in consequence of the sudden slip of the right foot, which, bending outwards, thus caused the whole weight of the body to be thrown upon the corresponding knee. I saw her four hours after the occurrence of the accident, when several fruitless attempts had been already made at reduction. The knee, which was very painful and a good deal swollen, especially on the inside, appeared to be unusually wide from side to side; a circumstance partly due to the tumefaction of the soft parts. The leg was one inch and a half shorter than the opposite one, and in a straight line with the thigh. The patella had sunk behind the head of the tibia, into a sort of hollow, which gave to the front of the joint a flattened appearance. Upon grasping the bone, however, with the thumb and fingers, it was easily drawn forwards, leaving a remarkable vacuity behind, in consequence of its distance from the inferior extremity of the femur. The condyles of the thigh-bone lay in the popliteal space, posterior to the head of the tibia, where they formed a large prominence, more distinct on the inside than on the outside, and situated, as it were, in the upper and back part of the leg, the muscles of which were unusually tense. The head of the tibia lay in front of the condyles, where its outlines could be easily traced with the eye and finger. Above this bone, as already stated, was the patella with its ligament and the tendon of the extensor muscles, forming a broad, thick cord in front of the thigh-bone, from which it was removed more than two inches. The leg was easily drawn away from its fellow, but could not be carried inwards, showing that there was extensive rupture of the internal lateral ligament. There was no contusion of the soft parts, nor any discoloration of the integuments.

Chloroform having been administered, a stout laque was applied to the upper part of the thigh, and confided to an assistant, to make the requisite counter-extension, while extension was made by another assistant grasping the foot, the limb being in the extended position. Placing now my left forearm behind the knee, and requesting the aids to pull gently and steadily, I suddenly, with my right hand, bent the leg backwards, and thus in a few seconds effected the reduction, the bone slipping into its proper situation with a distinct "snap." The limb being placed in an easy position, cold cloths were applied to the knee, and a grain of morphia administered to allay pain and prevent spasm.

No untoward symptoms appeared after reduction. The patient kept her bed for nearly a fortnight, and medicated lotions were applied, after the first twenty-four hours, to moderate and subdue inflammation. Purgatives and light diet were also enjoined. In due time passive motion was instituted; the limb was frequently bandaged; and in less than a month from the accident, the woman was able to walk about the house with the aid of crutches. The joint, however, remained weak for a long time, and even now, several years after the occurrence of the injury, the slightest fatigue is attended with temporary lameness.

ART. 137.—*On the most eligible spot for the performance of Amputation of the Leg.* By M. LARREY and others.

(*Gaz. des Hôpitaux*, Nos. 116-131, 1857; and *Medico-Chir. Rev.*, Jan., 1857.)

A prolonged discussion upon this subject has recently taken place at the Société de Chirurgie. M. Larrey took occasion to observe, that the soldiers who have of late arrived from the Crimea, having had amputation performed at the middle third or lower part of the leg, were in so bad a condition as to lead to the conclusion that amputation at the place of election must in the end prevail. The difficulty in employing artificial limbs is so great, and the accidents which result are so numerous, that the patients at last find themselves obliged to resort to the wooden leg. M. Chassaignac, believing our first duty to be the preservation of life, thinks we should never resort to the place of election when we can perform supra-malleolar

amputation. M. Verneuil stated that he had paid much attention to the ulterior effects of amputations, and he thinks that supra-malleolar amputation has been too exclusively recommended. There can be no doubt but that the immediate mortality is far less than after the old mode; but we should also take into account the amount of ulterior benefit derivable by the patient. Startling as the assertion may seem, he thinks that in certain cases it is better to run the chance of a greater mortality than to perform an operation that may prove useless and require repetition. Supra-malleolar amputation is much oftener followed by conicity and other defective states of the stump, than is amputation high up; while osteitis, caries, or necrosis of the bones of the leg, is a more frequent result. This last usually has occurred when the operation has been performed for disease of the tibio-tarsal joint, the osteitis of the bone having spread from the disease of the joint. The first results of the operation are deceptive—for it has an antiphlogistic effect—and for some months the patient may seem cured; but later, either spontaneously or from slight causes, the osteitis is reproduced, and may necessitate secondary amputation. Therefore, whenever amputation is performed for disease of this joint, it should be practised at the upper third. But in traumatic affections, and in disease of the bones of the foot, in which those of the leg but little participate, the supra-malleolar operation is preferable.

M. Guersant has found, in operating upon children, that the mortality is the same in both localities; but from his patients having in after-life to provide for their living, and finding difficulty in getting artificial limbs, he prefers operating at the place of election. M. Huguier dwelt upon the relative safety of the supra-malleolar operation, having lost only one patient in fourteen cases; but he admits that the predilection for this operation which his success imparted to him has undergone considerable modification on observing its ultimate consequences. These never follow when the operation is performed for traumatic lesions, and he does not recommend it in the case of white swelling. M. Broca admits that many patients who have undergone supra-malleolar amputation, have suffered severe accidents from want of a suitable prothetic apparatus; and great is the inconvenience produced by the long stump when a wooden leg is resorted to. Still these effects are as nothing when compared with the greater safety of the operation; and while it is admitted that five-sixths of these patients recover, more than half of those die who are operated upon at the place of election. Even in those cases when necrosis demands another operation, secondary amputation is less fatal than primary. As to the question of the ultimate effects of the two operations upon the stumps, after amputation at the place of election, the patient rests upon his knee, which gives him a firm support, but he is deprived of the power of flexion and extension of the joint. After the supra-malleolar amputation, the artificial limb is supported at the ischium, and a hinge-joint allows of such movements at the knee, that it is quite surprising how perfect a substitute the apparatus becomes. It is true that the poor only obtain ill-made apparatus, which frequently get out of repair, and often ultimately produce irritation and ulceration of the stump. Still it is the duty of the surgeon to perform that operation which saves most lives, and leave the supplying these defects to others.

M. Robert observed that if the relative amount of mortality were to decide the question, there could be no doubt about the preference. In children, however, amputation at the place of election is preferable, for the mortality is not greater, while there is difficulty in fitting a prothetic apparatus and necessity of changing it. Even in the adult, the question of preference is doubtful, when the occupations of the patient are laborious, for he then often forsakes the artificial limb for the greater solidity afforded by the wooden leg. Then, again, the nature of the lesion should exert great influence upon our decision. When it affects the foot, but not the joint, the supra-malleolar operation is preferable, but it should not be had recourse to in the case of white swelling of the joint. M. Giraldès thought that the instances of the soldiers coming from the Crimea, given by Larrey, were hardly fair examples of the effects of supra-malleolar operations, inasmuch as such patients had suffered much in the ambulances, and in shifting from hospital to hospital. He believes that some of the evil results are due to the application of apparatus prior to complete cicatrization. M. Hutin stated that during the eleven years he had been at the Invalides, he had had more than two hundred soldiers under his care

who had undergone amputation. In the great majority it had been performed at the place of election, or above this, and in not a single case had he observed any rupture or ulceration of the cicatrix. Among those patients, however, in whom it had been performed at the lower third, these were common. The fusiform disposition of these stumps, the almost constant presence of ulceration, and the inconvenience produced by the constriction of artificial limbs, induce the patients to reject these in favor of the wooden leg. With this, the large projection of the stump behind is most inconvenient, and gives rise to the production of great irritation. During winter, the stump becomes cold, violaceous, tense, and painful, while ulceration of the delicate and unsupported cicatrix is almost constant.

ART. 138.—*Case of Dislocation of the Metatarsus upon the Tarsus.* By M. MINONZIO.

(*Annali Univ. di Medicina*, June, 1856.)

Cases of this kind are very uncommon; indeed, their existence was denied by Boyer and Astley Cooper. Dupuytren, however, related several well-marked cases; and the case now related is not less marked.

CASE.—A man, æt. 60, strong and well, fell from a height of about eight arm-lengths, and alighted upon the toes of the left foot. At the moment of the fall he felt acute pain and a sense of cracking in the foot, and then he fainted. M Minonzio saw him two hours later, and found the foot curiously distorted. This part was swollen and livid in consequence of a copious extravasation of blood; it was shorter by full half an inch; the plantar aspect had almost entirely lost its normal arch, and the dorsal arch presented a transversal ridge, behind which was a deep hollow. On examination, the posterior articulating heads of the metatarsal bones were distinctly felt upon the tarsus. Reduction was effected, after some difficulty, by extension and counter-extension. Some hours afterwards, a partial dislocation had taken place again, and the operation of reduction had to be performed anew. The inflammation in the parts ran very high, and it was necessary to remain in bed some weeks; but in the end the patient was able to walk about without much difficulty, the foot being only very weak. The accident occurred on the 15th of December, 1854.

ART. 139.—*Cases of Excision of the Os calcis.*
By Mr. GREENHOW, Surgeon to the Newcastle Infirmary.

(*Proceedings of the Newcastle and Gateshead Path. Society*, 1856.)

Mr. Greenhow has previously removed the os calcis in four instances. In three of these the operation was successful; in the fourth the foot had to be amputated. This amputation was successful, but the patient sank subsequently from phthisis. Mr. Greenhow has now recorded two additional cases, one being successful.

CASE 1.—Ann H—, æt. 32, married, was admitted June 1st, 1854, with scrofulous disease of the foot, in which the os calcis was implicated. The disease began about eight months ago. Fistulous sores on each side and back part of foot permit the probe to pass into diseased bone, which, on careful examination, appears confined to the os calcis. Her health is beginning to fail a good deal. She has night sweats, with occasional diarrhoea, and suffers much pain in the diseased part, from which is discharged thin, unhealthy pus in considerable quantity. With the view of improving her general health, cod-liver oil was given in half-ounce doses three times a day, and she was allowed generous diet. Much improvement soon followed this plan of treatment, and on June 20th operative proceedings were determined on. She was, as usual, placed under the influence of chloroform, and an attempt was first made to remove the portion of diseased bone, without the entire excision of the os calcis. With this intention, an incision was made through the ulcerated parts of the integuments on the back of the heel. From the bone thus exposed some portions were extracted, but it was soon found that the disease was too general to admit of this mode of procedure being effectual. The incisions were therefore extended on each side of the foot to the inner and outer ankles:—behind, the inci-

sion thus made was about an inch above the apex of the heel, and was found to be extremely convenient for the completion of the operation. The bone was carefully exposed and separated from its connections with the astragalus and other bones of the tarsus, which were found in a healthy condition. Scarcely any bleeding attended the operation. The wound was drawn together by two or three sutures, and dressed with plaster and bandage, and the patient was carried to bed still in an unconscious condition.

June 21st.—She had a good night's rest, having had an opiate at bed-time. The foot was free from much pain.

24th.—Dressings were removed, and the wound was in a healthy condition. Simple dressing was applied.

28th.—Sutures removed, and is doing well. Appetite good, and gains strength.

In the course of July she improved much, and the wound was in a healing condition. One or two of the old openings still discharged, but she sat up during the day.

The improvements continued to advance till September 14th, when the wound was so nearly healed that a wax model was taken of the foot; and on the 18th she went home in excellent health, though not yet able to bear any great weight on the foot.

The direction of the incision in this case was somewhat different from those of former operations, but it had the advantage of preserving entire the sole, and the deformity was less than I had ever before observed. From these circumstances, I was induced to direct the knife in the same direction in the operation which was performed in the following case.

CASE 2.—Excision of the os calcis and astragalus.—Thomas K——, æt. 20, laborer, was admitted July 3d, 1854, with disease of the right foot, which originated in childhood from a cart-wheel passing over the heel. The foot was greatly enlarged, and extended in such a manner as to oblige him to walk on the toes. The ankle-joint was partially movable, but the elastic motion between the bones of the tarsus was very limited. Ulceration had occurred within the last few weeks, and a diseased condition of the os calcis was distinctly detected by the probe. His health had suffered from the local disease. An iodine lotion was applied to the seat of disease, and a tonic regimen was prescribed.

July 16.—With the design of removing the os calcis, an incision was carried from the inner to the outer ankle, about an inch above the apex of the heel. The necessary dissection was pursued to expose the os calcis, but it was found impossible to separate it from the astragalus. In the hope of removing the whole of the diseased portion, I passed a saw from above downwards and forwards, thus severing nearly the whole os calcis and a portion of the astragalus, but a large cavity, filled with pus, seemed to occupy nearly the entire remaining portion of the latter bone. It was therefore separated from its attachments, and entirely removed. This left a large hiatus between the bones of the leg and the remaining portion of the foot, and it hung very loosely. Though the chances of preserving it were but slight, an attempt was made to do so. Sutures, dressings, and side splints were applied. The posterior tibial artery was wounded, and required ligature.

In the evening he was easy, and the foot retained its temperature. An opiate at bedtime.

18th.—The foot cold, and sphacelus was taking place. He complained of much pain. Turpentine poultices were applied.

20th.—The foot was quite dead, and was separated by the knife from its attachment to the leg. The line of demarcation was complete, and no pain or hemorrhage attended this proceeding. Poultices.

22d.—Sloughs separating, and the stump looking more healthy.

28th.—The wound clean and healthy. Water dressings.

August 6th.—Doing well. Stump healthy, though the sloughing of the integuments has left a large granulating surface.

September 10th.—The stump has proceeded favorably. The sore greatly diminished, but the healing process did not go on rapidly.

The remarkably perfect union which had taken place between the os calcis and astragalus gave a peculiar character to this case; and after the removal of both those bones, which this rendered necessary, there could be but little chance of a favorable result without the amputation of the entire foot. Still it was perhaps not unjustifiable to ascertain what Nature (often so unexpectedly powerful in her results) could in this case accomplish. In a few days it became simply an amputation at the ankle-joint, and the end was a stump, perhaps more valuable than if the foot had been taken off above the ankle—though more time was necessarily required for the cure.

My attempt to save the remains of the foot in this case was not without a successful precedent, Mr. T. H. Wakley having removed, in December, 1847, both astragalus and os calcis in a patient, who did well. I may also notice that Mr. Statham, of University College Hospital, removed the astragalus with success.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 140.—*Case in which a child was born after the death of the mother.*

By Dr. SCHILLINGER, of Torgan (Prussia).

(*Vierteljahrsschr für Gericht. Med.*, Cap. 1, 1857.)

THE essential particulars of this case are as follows:

CASE.—The wife of the pastor A—, of L—, æt. 30, strong, stout, and predisposed to apoplexy, felt the pains of her first accouchement in March last—the precise date is not given. The first stage of the labor was completed naturally, but with the commencement of the second stage there was a great amount of fever, with a considerable amount of mental confusion and pain in the head. In the evening the patient became unconscious, after having been first of all attacked with general convulsions—*eclampsia parturentium*. The physician, who arrived at this time, prepared himself to bleed, when the convulsions returned, and the patient died undelivered. And not only did she die undelivered, but she was allowed to remain undelivered; indeed, no examination was made, and the only statement (which is made upon the authority of the *sage femme*) is, that the head was presenting naturally shortly before death. On the following morning the corpse was arranged in the ordinary manner, and removed to the sacristy of the neighboring church, where it was intended that it should remain until the burial, which was to be at the end of two days. After this, the corpse appears to have been left alone until the day appointed for the burial; and then, as they were arranging to place it in the coffin, a movable body was found between the thighs, along with a considerable quantity of blood; and this body, on further examination, was found to be a dead child at full term, strong and well nourished. Indeed, there is no alternative than to suppose that this child was born in the sacristy at least twenty-four hours after the death of the mother.

ART. 141.—*On the Utero-abdominal Tourniquet.*

By Dr. W. E. HUMBLE.

(*Lancet*, Nov. 1, 1856.)

In this communication Dr. Humble says:

“My instrument consists essentially of an ordinary tourniquet as used for amputations, but enlarged and made of proportionate strength. The bandage or belt is about a yard and a half in length, and about three inches in width, and made of firm woollen texture, such as is used for saddle-girths. For the sake of portability, the screw of the tourniquet is capable of being detached and put separately into the pocket, so that the instrument is even more portable than a pair of forceps; the tourniquet platforms and belt being put into one pocket, and the screw into the other; or, if desired, they may be placed in a small case for the purpose.

“The following is the mode of using the instrument: The labor having been completed, the accoucheur discovers that hemorrhage has been going on, and that

firm pressure is required to control it. He immediately applies the belt round the pelvis, and buckles it tightly with the pad and tourniquet over the region of the uterus. Probably this may suffice, but if he finds that the pressure exerted is not sufficient, he turns the screw and tightens the instrument to any extent he may desire. All this is done almost as readily and easily as it can be described; and during the time that would have been occupied in getting his bandages prepared, his napkins folded, and other arrangements made (besides the difficulty of applying bandages under the circumstances), he has placed his patient in a state of safety, without the slightest trouble or causing the least confusion. Should the severity of the case require the use of the plug also, a ribbon attached to the instrument in front, carried between the thighs, and pinned to the belt behind, will suffice admirably to retain the plug. It is well to remark that, to prevent the abdomen being pinched, and to adapt the pressure better, the belt should encircle the body from the upper platform of the instrument.

"The instrument, which I call 'Utero-Abdominal Tourniquet,' has been made, under my directions, by Mr. Bigg, of St. Thomas's Street. I feel that I can state confidently that it is as necessary and useful in post-partum hemorrhage as the ordinary tourniquet in amputations."

ART. 142.—*On Puerperal Fever.* By Dr. MURPHY, Professor of Midwifery in University College, London.

(*Lancet*, March 28, 1857.)

This paper is a sequel to a former paper (*vide* "Abstract," Vol. XXIII), in which Dr. Murphy objects to the propriety of considering this disease as an inflammation of one or other of the tissues. He now points out, that neither in the mode of the attack, in the symptoms, in the post-mortem appearance, nor in the treatment, does puerperal fever agree accurately with peritonitis. A closer resemblance to phlebitis was admitted, because both were blood-diseases, but he denied that they were identical. He then proceeds to explain his views of the nature of the disease, and shows that it is the result of a poison, and obeys strictly all the laws of morbid poisons. *Its action is definite and specific.* The seat of that action is the serous surfaces, especially the peritoneum and uterine veins, chiefly because of the rapidity of their absorption. He denies that the action itself should be considered a *specific* inflammation, although he admits that in certain cases inflammation may be excited. The term inflammation is used too extensively, being made to embrace actions perfectly opposed to each other. The design of inflammatory action is to preserve or repair organized structure, yet the term is given to actions that destroy it. Thus, cancerous inflammation, tubercular inflammation, are expressions sometimes used in such a manner as to mean that cancer and tubercle were only forms of inflammation. So, also, in the infantile lung, post-mortem appearances were described as lobar, lobular, vesicular pneumonia, which were caused by collapse of the lung. The tendency of a poison is to destroy organization; it is incorrect, therefore, to consider its action as a *specific* form of inflammation, which, whenever it takes place, is only for the purpose of limiting the action of the poison: and in this sense, just as the deposition of tubercle on the peritoneum is accompanied by peritonitis, so the puerperal poison may excite peritonitis; but the more powerful the poison, the less peritonitis; and the weaker its influence, the more distinctly are the evidences of inflammation observed. The action of the puerperal poison is on the blood; the quantity of fibrin is increased; the quality deteriorated; a profuse exudation of morbid fibrin takes place having none of the properties of healthy fibrin, it is not organizable; dissolves into a creamy substance, which melts into a fluid like pus, and, mixing with serum, forms the abundant "lactescent fluid" of authors. Exudations are not found in the veins, because they are not adhesive, but dissolved fibrin, like pus, is found abundantly. The puerperal poison seems a contrast to the typhus poison, which destroys fibrin, yet the typhus poison, absorbed by a parturient patient, will cause puerperal, not typhus, fever. It is the same with erysipelas. *The action of the poison is modified by the dose, as well as by the temperament and constitution of the patient.* Puerperal fever does not attack all indifferently, but selects its victims. The most important feature of this law is the manner in which the characters of the disease are modified by the quantity of the poison ab-

sorbed. When it is in excess, the patient may die without any other symptoms than a fluttering pulse and cold, livid surface. On the other hand, the dose may be so small that true inflammation is set up to arrest it, and thus peritonitis, phlebitis, or arthritis takes place. Hence the contradictions amongst authors, those who meet the latter class of cases calling the disease peritonitis, &c., while those who witness the former stand aghast at symptoms which no theory of inflammation can explain. The coexistence of hooping-cough and measles, of syphilis with erysipelas, proves that two morbid poisons may each set up their specific actions in the same person at the same time. Erysipelas and puerperal fever have occurred in the same patient; but the author has generally found erysipelas to precede or follow puerperal fever rather than accompany it. Erysipelas excited puerperal fever; but when the latter was at its height the former disappeared.

The author objects to the opinion that erysipelas and puerperal fever are identical, and does not consider those cases described by Gooch, in which the peritoneum was pale and colorless, as puerperal fever at all. They might be instances of erysipelas, if this poison ever attacks serous membranes. The author considered the poison as a contagion, just like the cadaveric poison, which seems so similar to it; and he briefly enumerates the symptoms of the disease to explain the principle which should guide us in the treatment. According to its strength, the constitution makes an effort to get rid of the poison, whether by vomiting or by purging, by the skin, or by the kidneys. The observation of these efforts led Donat to use emetics; Boër, kermes mineral; Denman, tartar emetic; and Armstrong, salts and senna. If the effort fail, the poisoned blood accumulates at the centres of the circulation, which are relieved by a prompt and bold depletion; for such a purpose, thirty, forty, even fifty, ounces of blood have been taken with decided benefit; but depletion should instantly follow the rigor, because if time is lost, the very same treatment may only hasten dissolution. Camphor and turpentine have been recommended in the treatment of this fever. These remedies are not only stimulant but anæsthetic, and are useful not alone in supporting the constitution against the attack, but by diminishing pain, they lessen nervous exhaustion. Reasoning on these facts, the author has tried chloric ether with great advantage, and recommended it strongly to the consideration of the profession. General rules cannot be laid down for treatment. If the dose of the poison be a maximum, nothing will save the patient: if in such quantity that the constitution can make some effort to get rid of it, much of our success will depend upon a close observation of the manner in which the effort is made. Prompt depletion has saved many a patient. The judicious use of emetics, purgatives, diaphoretics, and even diuretics, has averted the attack by aiding a natural effort. If the dose of the poison be a minimum, then peritonitis, or phlebitis, become prominent, and must be treated as such. Thus what are called the inflammatory and ataxic forms of this disease, merely signify the degrees in the dose of this poison. The author alluded to the importance of prophylactic agents, to *ventilation* and the improvements lately introduced, to chlorine as a means of destroying the poison, and to anæsthetic agents as a means of blunting the sensibilities of the nervous system and diminishing the activity of absorption. In this sense he considers chloroform extremely valuable; and so far from fearing its influence in causing puerperal fever, he looked upon it as a preventive.

ART. 143.—*On the employment of Electricity in suppression of Milk.* By M. BECQUEREL.

(*Gaz. Hebdom. de Méd. et Chir.*, Jan. 16, 1857.)

This case was related at a recent meeting of the Medical Society connected with the Parisian Hospitals.

CASE.—The patient was a young woman, æt. 27, of a somewhat nervous temperament, who had suckled her child for six months without any lack of milk. At the end of this time her milk failed, in consequence of circumstances which were calculated to excite and agitate her very greatly, and there was no supply for about a week. Then it was that M. Becquerel determined to try the electricity, with a view to restoring, if possible, the wanting secretion, for the child was wasting rapidly, and the mother would not consent to the employment of a nurse. In order

to this, the apparatus of Gæffe and Loiseau was used, and the current (it is not stated whether this was interrupted or continuous) was passed in various directions through the substance of the breast, by means of moistened sponges applied to the ends of the wires. Three sittings of a quarter of an hour each were used, and the strength of the current was regulated so as to cause not more than a feeling of malaise. In the first sitting, the rush of milk came almost instantly after the application of the electrodes, and after the third sitting the supply was abundant.

ART. 144.—On the use of *Belladonna* in arresting the secretion of Milk. By Mr. BURROWS, of Liverpool.

(*British Med. Journal*, March 28, 1857.)

Mr. Burrows' case is another proof of the peculiar power of belladonna in arresting the secretion of milk.

CASE.—Mrs. R.—, æt. 26, commenced the weaning of her second child on March 10th, 1857. On March 11th, I saw her. She complained of great pain of the left breast, which was inflamed, much distended, and very hard. She directed my attention particularly to a wide, callous, and painful prominence, that resembled a thick convex belt, which stretched from the mamma to the clavicle. I prescribed the diluted extract of belladonna, and directed it to be applied as in the former case. I saw her again on the following day. She said her breast continued distended and painful. I then had a momentary doubt of the efficacy of my remedy. No sooner had the thought crossed my mind than she said, "I washed off your salve, and put on sticking plaster, at the recommendation of a female friend of considerable experience." I spoke to her of the impropriety of calling in a medical man, if she would not follow his advice. She felt the remark, and replied, "I will take off the plaster, and apply your preparation." I urged her to do so without delay. Having lost some valuable time, I deemed it necessary to combine with the application of the extract the administration of the purgative mixture, with the wine of colchicum. Had there been no delay, I intended to test the antilactific power of the remedy alone, without the combined influence of any other. Time having been lost, I was afraid of trusting to it, lest suppuration should ensue.

On March 13th, I visited her. She met me with a smile, and exclaimed, "My breast is better; the pain is gone, and the fulness reduced." She continued the application till the following morning, when the breast was cool, pale, and flaccid, and the elevated hardened integument, that stretched from the breast to the clavicle, diminished in size, softer to the touch, and free from pain. The secretion of milk is arrested, there being no spontaneous dribbling from the nipple, nor can any milk be squeezed out of the breast.

ART. 145.—On the *Asphyxia* of New-born Children and its treatment.

By Dr. MARSHALL HALL.

(*Medical Times and Gazette*, Dec. 13, 1856.)

"The newly born infant and the newly born of many of the mammalia are in a peculiar condition, both in an anatomical and physiological point of view. The foramen ovale and the ductus arteriosus, being still open, the blood of the pulmonary circulation is still diverted from the channels it is destined to pursue, and in this respect it resembles the reptile tribes. Respiration and every stimulus, except temperature, being absent, the excitability of the spinal system, and the irritability of the muscular system, exist in their highest condition, according to a law of animal life which I announced some years ago, viz., that these faculties are, throughout the animal kingdom, inversely as the stimuli. The new-born fœtus is, therefore, a creature of high excitability and irritability. But such an animal bears the absence of stimuli precisely in the same ratio. Respiration is the chief of these stimuli; therefore, to arrive at the subject of this paper, the new-born fœtus can long survive the absence of respiration. The condition of apnoea and of asphyxia, without the absolute loss of life, is therefore of long duration, and the hope of restoring the still-born infant is long protracted; so must, therefore, our efforts at resuscitation be.

"These efforts consist—

"1st. In measures to induce efficient respiration; and

"2dly. In measures to maintain the circulation.

"In order that respiration may be effected, we must adopt the following means :

"1. The infant must be placed in the prone position, in order that all fluids, which might obstruct the entrance into the windpipe, may flow away.

"2. Nature's mode of operation being to impress the trifacial and cutaneous nerves, the external excitors of respiration, by the external cold, we must dash a few drops of cold water on the face and the general surface.

"3. We must proceed, having failed to excite respiration, to imitate the respiratory movements :

"This must not be done by any forcing means ; even the human breath forced into the infant's lips, may tear the delicate tissue of the foetal lungs. We must, on the contrary, adopt some measure of drawing the air into the lungs. This is effectually accomplished by first placing the little patient briskly in the prone position, to clear the fauces ; then pressing gently on the back ; and then removing that pressure, and turning it gently on the side and a little beyond.

"4. Meantime, the limbs are to be rubbed, with gentle pressure, upwards, to promote the circulation, by propelling the venous blood towards the heart.

"5. At proper intervals we must again endeavor to excite the respiration physiologically.

"The infant is to be placed with the face prone, and douched alternately and rapidly with water of the temperatures of 60° and 100° Fahr. High and low temperatures are equally excitants of the reflex function of respiration, and their power, within physiological limits, is in proportion to the difference of those temperatures. We must remember that the newly-born infant is a creature of high irritability and low stimulus, and that the foramen ovale and ductus arteriosus are open—both events greatly calculated to protract life and hope in the case of apnoea ; and we must long, very long persevere in our efforts to save the still-born. The still-born infant has been restored after it has been neglected for hours. There is a remaining consideration. The effect of apnoea is a condition of the blood surcharged with and poisoned by carbonic acid ; from this condition of the blood a secondary asphyxia and convulsions are apt to occur in the adult. I do not know whether this be the case with the newly-born infant.

"The remedy and preventive of such secondary asphyxia would be free exposure to the breeze, with the inhalation of very dilute pure ammonia.

"The treatment of the still-born infant may finally be thus briefly resumed in the form of rules :

"1. Place the foetus on the face.

"2. Sprinkle the general surface briskly with cold water.

"3. Make gentle pressure on the back ; remove it, and turn the infant on the side ; and again place it prone with pressure.

"4. Rub the limbs with, gentle pressure, upwards.

"5. Repeat the sprinkling only now, with cold and hot water (of the temperatures of 60° and 100° Fahr. alternately).

"6. Continue these measures, or renew them, from time to time, even for hours. The embers of life may not be entirely extinct."

ART. 146.—*On the suckling and feeding of Infants.* By Dr. KUTTNER.

(*Journ. für Kinderkr.*, Bd. 26, 1856 ; and *Med. Times and Gazette*, Jan. 24, 1857.)

Dr. Küttner, of Dresden, presents the following aphorisms as the fruits of his practical observation :

1. A knowledge of and attention to their proper nourishment is a fundamental necessity for the successful treatment of sick children. He who will cure them must before all things know how to feed them.

2. Articles of diet must often serve as medicine, and medicine be used in place of food.

3. The mother's breast is the best food for the infant ; and only when an absence of milk, or the condition of the mother's health renders suckling impossible, should the substitution of a nurse receive medical sanction.

4. In the choice of a nurse we cannot be too careful and suspicious ; but the most careful examination may prove defective unless we can ascertain the condition of her own child.

5. Nurses sometimes conceal their deficiency of milk with much cunning. The continuous, spontaneous issue of milk is by no means a sign of actual abundance, but far oftener of an atonic state of the milk-ducts and nipples.

6. When an infant does not thrive upon a breast, but is thirsty, constipated, and restless, the nurse, whatever the condition of the secretion of her milk may be, must be changed without hesitation.

7. Let the change be made at once, for all delay is injurious to the child.

8. A nurse's milk should entirely suffice for the child; but when the mother's milk does not do so, it should be made up, not by food but by other milk—it being a popular error that the two milks do not agree.

9. It is not rare to find, in nurses having apparently abundance of milk, that this undergoes on their first arrival a considerable diminution. Regret at leaving their own child and home, different mode of life, and the irritation of the gland by the suckling, are the causes of this inconvenience, which ceases if we wait quietly and encourage the woman.

10. The only test of the goodness of a nurse is the condition of the child. The state of its stools testifies to the quality of the milk, and the amount of urine to the quantity.

11. Except during the first few days, suckling every two hours is most suitable; for a too frequent and a too seldom application to the breast are alike injurious to the condition of the milk. For the sake of rest, a pause of five or six hours should be secured at night.

12. The appearance of the menses while suckling, if not accompanied by an abiding diminution of the milk, is not hurtful to the infant.

13. Suckling from a suppurating breast is not without danger both for the infant and the nurse.

14. The period for ceasing suckling, or for combining feeding with it, cannot always be determined beforehand. Neither the age of the child or the presence of a certain number of teeth can alone determine this. Of not less importance are the state of the health and development of the infant, and its longing for other food, accompanied, as this sometimes is, with a remarkable indifference to the breast itself. The time of year, the condition of the nurse, and especially of the secretion of milk, have also to be taken into consideration.

15. The wide-spread opinion that cow's milk is more suitable in the spring, owing to the character of its food, is without foundation, as the milk is often then purgative; while in the autumn it often undergoes an advantageous chemical change.

16. Gradual weaning, when possible, should always be preferred.

17. When suckling is impossible, cow's milk offers the best substitute.

18. The artificial feeding of children, properly managed, does not lead to such unfavorable results as usually supposed; but it is more troublesome, and often more expensive than a nurse. Children so brought up may appear during the first six or nine months more imperfectly nourished than sucklings; but after that period they regain their size, and no difference can be detected between them.

19. It is always a great advantage for children who are to be brought up by hand, if they can be suckled during the first weeks, if even only partially.

20. We cannot lay down any absolute rules for artificial feeding, which requires adaptation to individual cases. The thriving of the child, the condition of its bowels, and its quietude or restlessness must be our guides.

21. The chemical analysis of milk shows especially that this secretion is liable to great individual quantitative and qualitative varieties, dependent upon a great variety of circumstances. Hence, the remarkable differences found in the examinations of the milk made by different chemists, and the difficulty in constructing a scale of the various kinds, according to the amount of their constituent parts.

22. Every addition to cow's milk should have for its object the rendering it more similar to human milk, and, consequently, more digestible.

23 and 24. Much importance is not to be attached to always obtaining the milk from the same cow, or to the cow being fed on dry food (hay, &c.)

25. The morning's milk is preferable, not only because it is fresher, but because it contains notably less fat and casein.

26. Warming the milk when it cannot be given just after milking is desirable; for it otherwise gives rise to flatulence, diarrhoea, or constipation, or, at all events,

to a most offensive smell of the evacuations, which at once disappears when the milk is given boiled. During the boiling a caseous membrane is formed, which, protecting the milk from the access of the air, causes it to keep better.

27. Skimmed milk is not suitable for infants. Cow's milk does not contain much more fat than human, and the quantity is easily diminished by dilution. Skim milk is not only too poor in fat, but it is too old; for, having stood so long to yield its cream, it has undergone certain chemical changes. As a general rule, it is an error to forbid children fat, butter, &c., in their diet, as we thus prohibit an important article of nutrition, that appears essentially to contribute to the assimilation of albumen and its modifications. Both substances are found in the maternal milk, the fat being more abundant the shorter the time that has elapsed since delivery. Fat is also an important medicinal agent in diseases such as scrofula and rickets, indicative of a defective nutritive process.

28. Cow's milk in general contains very little more solid constituents than human milk, and the dilution usually made is not theoretically justifiable; and, at all events, this should never be carried so far that the child takes only one half milk. Cow's milk is not rendered indigestible by the absolute amount of solid constituents, but either by their chemical condition or their proportions to each other being different, neither of which conditions is influenced by dilution. Not only does too great dilution deprive the child of nutriment, but it renders the milk more indigestible, for the author's experiments have shown that the more diluted the milk the more firm does its coagulum become. He has seen many children thrive well when fed from their birth upon undiluted milk, and especially when they could drink it fresh; and if given diluted at all, not more than one-fourth, or at most a third of water should be added, to be left off after some months.

29. Among all the differences between cow's and human milk, the proportion of caseum is the most important, for not only is this more abundant, but it coagulates with more difficulty. While that of human milk coagulates into a loose, flocculent jelly, the caseum of cow's milk hardens into large firm lumps, which are with difficulty soluble, easily disturb digestion, and are often found unchanged in the stools. This alone constitutes the difficulty in nourishing infants upon cow's milk, and it also forms the best test for ascertaining the suitable digestion of the milk. To remove this by coagulation, and feed the infants upon the whey, would be to deprive the milk of some of its most precious constituents. Our object must be to render the coagulum as little firm as possible. Dilution only renders it more so, while the addition of half a teaspoonful of Pulv. Acaciæ to each cup of milk exerts a very good effect, the coagulum then taking on the appearance of a loose jelly. Such milk is well borne, and the undigested lumps of caseum are no longer found in the better-colored stools.

30. Human milk is sweeter, and the addition of sugar to cow's milk is the more required the more diluted this is used. Sugar of milk is most to be preferred, although it sweetens less. Its sweetening power is, however, increased by the addition of a minute quantity of salt.

31. Addition of salts to cow's milk is unnecessary, as these are already more abundant than in human milk. In order to prevent acidification of the milk, and especially in summer, it is desirable to add a little chalk before boiling the milk, or, in the case of constipation, magnesia. Cow's milk requires as little assistance from other articles of diet as does the human milk. When the development of the child is sufficiently advanced, and especially if several teeth have appeared, vegetable nutriment may be added, as biscuit, or roll, and, later, gruel. These substances should be well soaked in water or weak broth, and a little salt, not sugar, added as a condiment.

32. If the sucking infant is the subject of diarrhœa, we must not all at once alter its food, but rather change the diet of the nurse, or if necessary employ another. When the employment of cow's milk with farinaceous or gummy substances cannot be borne, and an exhausting diarrhœa continues, we should substitute raw yolk of egg in a decoction of grits.

(B) CONCERNING DISEASES OF WOMEN.

ART. 147.—*On the age in which Hysterical Affections are most liable to be developed.* By Dr. BRIQUET.

(*L'Union Médicale*, Sep. 4, and 20, 1856; and *Medico-Chir. Review*, April, 1857.)

Dr. Briquet passes in review the doctrines taught by various writers on the subject of the occurrence of hysteria, and then analyzes a series of 467 cases occurring in his own practice in the course of ten years, in which the commencement of the affection was carefully noted. Some of his inferences would probably not be universally adopted, but his numbers are important, the more so as they are in the main corroborated by the analysis of numerous cases collected by Dr. Landouzy whose results are also given in the following table:

From birth to 10 years				Landouzy. 0 cases	Briquet. 61 cases.
" 10	" 15	"	48	"	104
" 15	" 20	"	105	"	162
" 20	" 25	"	80	"	73
" 25	" 30	"	40	"	28
" 30	" 35	"	38	"	13
" 35	" 40	"	15	"	12
" 40	" 45	"	7	"	3
" 45	" 50	"	8	"	1
" 50	" 55	"	4	"	2
" 55	" 60	"	4	"	1

Dr. Briquet attributes the differences that are manifest between his table and the numbers given by Dr. Landouzy to the circumstance of his having exercised great care in determining the exact commencement of the disease. The following are his chief conclusions:

1. A considerable number of cases of hysteria occur while the sexual organs are yet in a rudimentary state.

2. The development of hysteria does not bear a direct ratio to the period of activity of the sexual organs, as this period commences at eleven or twelve years, and does not cease till the fortieth or forty-fifth year. On the other hand, hysteria progressively advances up to the age of twenty, and very rapidly diminishes from the twentieth to the forty-fifth year. Consequently, of thirty-four years of sexual activity, there are only from nine to ten during which hysteria prevails, while it becomes less frequent during the remaining twenty-four; and yet the sexual activity is greater from twenty to forty-five years of age.

ART. 148.—*On Sterility.* By Mr. J. BAKER BROWN, Surgeon-Accoucheur to St. Mary's Hospital.

(*Lancet*, Feb. 28, 1857.)

The chief point in this paper is the treatment of dysmenorrhœa when it mechanically was a cause of sterility. The author says it is a derangement which might be either mechanical or spasmodic, and numerous expedients had been resorted to for its cure, such as catheterism, caustics, cutting, sponge-tents, and similar mechanical contrivances, the object being to overcome stricture of the os and cervix uteri. Mr. Brown states that he could adduce several instances where the protracted use of the metallic bougie, or of ordinary elastic bougies, had been successful. He then calls attention to a set of instruments, which he had contrived, to dilate the os and cervix uteri where this operation was called for. He has made use of the suggestions of Mr. Thomas Wakley, who had devised and carried out a tubular system as applied to stricture of the urethra with remarkable success. In his (Mr. Brown's) instruments he has a sort of long stilette, which he introduces into the os uteri, through the speculum, as in the ordinary mode of passing Simpson's uterine sound, and then over that he passes the smallest-sized elastic tube, and allows it to remain for a longer or shorter period, according to the pain produced.

It would be found that cases which presented almost insuperable difficulties in their dilatation readily yielded under this simple contrivance, and without producing any bleeding or laceration, the not unfrequent results of ordinary dilatation. The most advantageous period for the introduction of the instrument was immediately after the secession of the catamenia, before contraction of the canal had taken place and it had returned to its usual size. Mr. Brown then remarks that he wished to observe here that he has never seen the necessity for the introduction of caustics into the cervix for the purpose of dilatation; and he thinks that no one who had studied the delicate structure of the lining membrane of the uterine cervical canal, and who recollected the necessity for its expansion and contraction at each menstrual epoch, would ever be induced to destroy any portion of it by such means. He had had many cases come under his notice where partial occlusion of the os and cervix had been the result of their use, and he felt quite certain that the employment of such agents was a more frequent cause of sterility than was generally supposed. Mr. Brown then proposes to speak of a series of causes of sterility which had not been previously recognized, and which he classed under diseases of the rectum. He would first recall to the minds of his readers the general law of the animal economy.—That any irregularity or interference with the functional action of any one part of the body affects more or less the whole body. If this law pertained to the body generally, how much more must it pertain to the female organs of generation, where the slightest deviation from normal functional action must materially interfere with the delicate physiological process of impregnation and the contiguous organs. It must be borne in mind that both the rectum and uterus are supplied with blood from the internal iliac artery, and with nervous influence from the sacral plexus; and that therefore disease or functional derangement in the one part or organ must interfere with the other. Mr. Brown illustrates it in the following manner: A female is suffering from bleeding hemorrhoids. At the menstrual period there is an increased supply to the hemorrhoidal vessels, and consequently a diminished supply to the uterus, because Nature only sends down a sufficient supply for the uterine function. The same observations apply to prolapsus ani, where there was always some loss of blood at every time of defecation, and a greater loss at the period of the menstrual epoch. If a patient was suffering from fistula or fissure, there was constantly more or less pain in the uterus, as a result of reflex action, and consequently it was always under a state of irritation, which rendered it unfit for the quiet and perfect performance of its duties. Indeed, he (Mr. Brown) has seen many cases, which he would mention on a future occasion, of patients having been treated for months and years for uterine inflammation, with leeches, caustics, &c., where he had discovered a long-standing fissure of the bowel, which had been the sole exciting cause of the uterine affection. Mr. Brown then adds, that the observations might probably be deemed wanting in value and importance; but he is convinced that if he was successful in arousing the attention of medical men to the causes and treatment of sterility in the female, some credit would be given him for the attempt to rescue the subject from neglect and from the clutches of quacks, and for the views he had laid down of the effects of causes which act apparently by sympathy with and contiguity to the reproductive organs. On his part, the subject would continue to receive his best consideration; and he hopes to be enabled to present his opinions and practice more at large in a work dedicated to the profession.

ART. 149.—*On Infra-mammary Pains.* By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Edinburgh Medical Journal*, April, 1857.)

A local limited pain under the left mamma, more rarely under the right, is a species of suffering which is not unfrequently seen in the female sex, and it has been alluded to and described by various authors. Usually the seat of the pain is limited to a part not more extensive than a crown piece. Sometimes it spreads further, and circularly around the side. It is apparently seated in the soft parts covering the ribs, and principally in the integumental coverings. Often it coexists with uterine disease. Sometimes it persists for weeks, months, and years, occasionally recurring in fits, more generally of a chronic, and more permanent nature.

Many means have been suggested for its relief and treatment; as cupping and counter-irritating the corresponding portion of the vertebral column; applying leeches, blisters, sedatives, &c., to the affected part. Latterly, in a considerable number of instances, Dr. Simpson has injected the subcutaneous tissue at the pained part with ten or twenty drops of the common solution of the muriate of morphia, or with a watery solution of the bimecomate of morphia, of the same strength, according to the plan ingeniously suggested by Dr. Alexander Wood for the cure of neuralgia, and the results have been in most cases successful beyond his previous hopes. He has seen the pain at once disappear in a number of instances in which it had previously persisted for various lengths of time. In most a single morphia injection has sufficed; in some it required to be repeated twice or oftener. The instances which have not yielded to this treatment have been relatively very few in number, compared to those in which it has succeeded; and the measure is so simple and so generally effectual as to deserve the attention of all practitioners.

ART. 150—*A case of Cancer of the Mamma removed by a painless method.*
By Mr. BARWELL, Assistant-Surgeon to the Charing-Cross Hospital.

(*Lancet*, March 14, 1857.)

There are, besides the many mineral escharotics, several belonging to the vegetable kingdom, which have the advantage of painlessness. Moreover, they hardly act on any but fungoid or lowly organized growths. Such are, for example, oak-bark, the *sanguinaria canadensis*, &c. In this case tannic acid was used.

CASE.—M. H—, æt. 62, came to Mr. Canton, at the Charing-Cross Hospital, with a tumor in the right breast, on the 5th of January, 1857. She has borne and suckled seven children, suffered eight miscarriages, and ceased menstruating at fifty. For some years past has been troubled with business difficulties; but about Christmas, 1854, more important family troubles deprived her of sleep and appetite; she lost flesh, and has since remained thin. In February, 1856; that is, fourteen months after the commencement of these more serious anxieties, she found by accident a hard lump, about the size of a marble, in the right breast. Up to last November this tumor remained passive, but at that time began to increase rapidly, and to give rise to sharp, darting pains. Mr. Canton seeing her on the 5th, pronounced the tumor scirrhus, and, knowing me interested in such, was kind enough to order her to return in a week, that I might have an opportunity of seeing the case. On the 12th January I saw her with Mr. Canton. She is rather tall and spare, with a worn look, slightly yellow tinge of complexion. The tumor, as large as a full-grown English walnut, was at the inner side of the breast, and a little below the level of the nipple. It was of stony hardness, without claw-like prolongations, smooth on the surface, and moveable amongst the tissues. The skin was adherent over a space rather larger than a sixpence, and in the centre of this space was a small dry scab, which, when removed, showed an ulcer, around which the skin was just beginning to wrinkle. Mr. Canton removed this tumor together with a good deal of surrounding tissue. The wound bled considerably. Various styptics were used, and in about six hours the bleeding was arrested.

I took the tumor home with me for further examination. On cutting it in halves, it creaked under the knife, showed a pearly surface, with fibrous appearance. On pressure there oozed forth a white homogeneous juice, which emulsified perfectly in water. A piece of tumor showed, under a magnifying power of three hundred diameters, fibrous matter in considerable quantities, and a large number of nucleated, binucleated, and nucleolated cells, with thin walls and irregular outline. Running round the tumor, in its substance, was a thin red vascular line, lost in the little ulcerated spot above mentioned. This appeared to me the first step towards softening.

January 19th.—The wound has been going on well; but to-day it has assumed a somewhat suspicious appearance.

27th.—Mr. Canton was good enough to offer the future management of the case to me. I noted the following general and local appearances:—The skin had assumed a duller and yellower hue; the conjunctiva was of an ashen-green color; the patient had a worn look; was dark under the eyes; had little appetite. There was a hard tumor, which partly enclosed the outer angle of the wound, and

extended two inches beyond it, the growth measuring laterally nearly three inches; from top to bottom an inch and a half; the end of the wound cuts an angular slice out of this tumor, the cavity being lined with ragged tissue, some of which I clipped off, and, under the microscope, found it to consist of soft fibrinous matter, mixed with some such cells as above described, but chiefly with free and clustered nuclei with nucleoli. I applied, by means of a sable brush, a solution of tannic acid—one ounce of acid to half an ounce of water; and ordered her to take fifteen minims of the chlorinated soda solution, in water, three times a day.

On the following morning there was a thick white slough, which could be partially separated, so as again to allow of a free application of the acid. This escharotic was applied daily; it caused no pain; indeed, a throbbing, darting pain, which she had complained of at first, was soon greatly lessened; portions of slough separated occasionally from the mass, and were removed; and on the 10th of February, the whole dead tumor came away, leaving a pure granulating concave surface. Thus, in fourteen days, the diseased mass had been removed by a painless process. There remained of course a cavity to be filled up; but this was not large, because this application draws the sound parts so close round the slough, that they push it out further and further, so that the hollow is not as big as the tumor, which was removed from it.

On the twenty-eighth of February, the wound had healed, without any induration; and the patient left the hospital greatly improved in health, with a clear complexion, and without that peculiar dull ashen color of the conjunctiva.

ART. 151.—*On Iodine Injections in Uterine Hemorrhages.*

By M. DUPIERRIS, of Havana, Cuba.

(*North American Med.-Chir. Review*, Jan., 1857.)

"A patient applies," says M. Dupierris, "laboring under chronic uterine hemorrhage, no matter how caused, whether by an organic affection or a functional derangement. I place her under the following treatment: The woman is put upon an inclined plane, prepared across the bed by means of the back of a chair turned upside down and covered with pillows. The feet are placed on chairs, and the patient is seated on the edge of the bed, or rather on a pillow, which terminates the inclined plane. After having covered her with a sheet from the breast down, I direct her to raise up her clothes, so as to remain covered by the sheet alone. I then grease the trivalve speculum (a modification of Charrière's), and introduce it in the ordinary manner. Then I surround the instrument at its base with the edge of the sheet, which is crossed underneath, and tucked under the seat of the patient. I give the handles of the instrument to the patient herself to hold. By means of a candle I examine the state of the os uteri. The latter, which is situated in the middle of the instrument, is cleaned of the mucus which generally adheres to it. It then presents its orifice ready to admit the end of the syphon or the syringe. An instrument of this kind, large enough to contain about an ounce and a half of fluid is selected for this operation. I have affixed to it a silver probe about five inches long; the end of the probe is a little enlarged, like that which is used to cauterize the Eustachian tube. The syringe is filled with a mixture of tincture of iodine and water, in the proportion of one-third of the former to two-thirds of the latter. The end of the syphon is pushed up, as far as possible, into the cavity of the uterus, and the injection administered with some degree of force. The liquid comes out of the cavity of the uterus as fast as introduced, and is soon all expelled. The uterus is ascertained to have contracted from the circumstance that mucus is very often attached to the end of the instrument in the form of a rather large ball. The woman experiences occasionally a sensation of heat, and sometimes a slight pain at the hypogastric region. The injection is repeated, if necessary, at the end of three or four days. The next day the hemorrhage is found to have lessened; it diminishes the following day, and generally disappears on the third.

"I have resorted to this method of treatment more than a hundred times, and found but one case to resist it. This patient was an old lady, who had had uterine hemorrhage for many years."

'ART. 152.—On blistering the Cervix Uteri in certain uterine diseases.

By Dr. JOHNS, Ex-Assistant to the Dublin Lying-in Hospital, &c.

(Dublin Quarterly Journal of Medical Science, May, 1857.)

"As it is familiarly known that leeches, when applied directly to the cervix uteri in inflammatory and other affections of that and neighboring organs, act far more beneficially than when employed externally, and at a greater distance from the seat of the disease (as first enjoined by M. Guilbert),—so, as blisters, when used externally, act sometimes salutarily in the cases now under consideration, may we not reasonably expect that their direct application to the offending viscus will be still more likely to be productive of good. Actuated by this, as well as other reasons, I have made trial of their efficacy, and I have not been disappointed in my expectations.

"The plan I adopt for blistering the cervix uteri is as follows: The parts are first brought into view by means of a speculum; I generally use Fergusson's, but with moderate care any other will answer as well. They are then to be well freed from any mucous or other discharge, by a dry, soft sponge; sometimes the mucus is so adherent, particularly when exuding from the os, that it is necessary to damp the sponge for its removal; in all cases, however, the parts must be well dried; after which a concentrated solution of cantharides in sulphuric ether, mixed with the ordinary solution of gutta percha in chloroform, in the proportion of two parts of the former solution to one of the latter, is to be rapidly rubbed on the cervix by means of a camel's-hair pencil two or three times, according to the effect produced, as indicated by the appearance of the part, or by the sensations of the patient.

"My first essay was with vesicating collodion, but as it caused great pain, both during its application and for hours afterwards, only ceasing on the appearing of the watery discharge, and as its operation was not sufficiently expeditious or efficacious, I had a strong solution of cantharides in chloroform, in which gutta percha was afterwards dissolved prepared, for me by Mr. Walsh, of Westland Row, which had the advantage of being painless during and after its use; but it was not so speedy in its action, nor so powerful in its effects as the collodion. Therefore, after consulting with several chemists in the city, I eventually applied to Mr. Williams (Dr. Butler's chemist), who, after having made several experiments, kindly presented me with a specimen of the preparation which I now use, and offer to the profession as being fully adequate to fulfil the indications required. It is frequently of advantage to keep open the blistered surface, and this is satisfactorily done by the weaker preparation in chloroform, which I denominate vesicating gutta percha, No. 2, the ordinary one (vesicating gutta percha No. 1 being rarely required for that purpose). For some days after the operation I direct vaginal injections of cold water to be used, and sometimes I wash over the parts with a weak preparation of nitrate of silver. At first I was in the habit of keeping open the blisters by some strong caustic, but I very soon learned that the weaker solution of cantharides answered the purpose better.

"During the appliance of this remedy the patient experiences a pricking, stinging pain, together with a sensation of heat, sometimes amounting to burning—it is very bearable, and ceases almost immediately; indeed, in some cases she will not tell you of it unless you ask her; in others a sweet, pungent taste and smell are experienced, or an ethereal odor is perceived on her breath by another. Very frequently, in fact generally, small vesications appear at the time, and a watery discharge sets in within half an hour afterwards (which has a scalding sensation whilst passing), sometimes even before the speculum has been withdrawn. This discharge, starching the linen, and in other respects similar to that from blisters externally formed, lasts commonly for three days, when to it succeeds one of a slightly purulent nature, but not productive of pain. At this stage we shall find the epithelium thickened and raised, and coming off in patches, like bits of chewed paper; but, prior to it, vesications, like to those on the skin, are very plainly visible with their exudation. On more than one occasion I have seen a watery discharge produced by preparation No. 2, from a surface previously blistered, used to keep it open; and the same phenomenon has occurred on an ulcerated surface.

"Blistering the cervix uteri does not cause any unpleasant sensations towards the rectum, bladder, or neighboring organs. I never saw strangury or such like

affection thereby induced; on the contrary, I have employed it more than once when vesical irritation was present, which, so far from being increased, was completely removed by two applications.

"The average length of time for repeating this treatment is about six days, unless it be desirable to keep up the process; then, in that case, it would be about three days."

Dr. Johns then relates twenty-four cases in illustration of this mode of treatment, and after alluding to M. Arans's experience on the same subject, he draws these deductions from his own experience:

1. That minor idiopathic affections of the uterus and ovaria are curable by blistering the cervix uteri.
2. That symptomatic and sympathetic pains at the decline of uterine and ovarian diseases, and after the cure of those affections, are removable thereby.
3. That ulceration of the cervix uteri sometimes quickly cicatrizes under this treatment.
4. That the phenomena attendant and consequent on blistering the cervix uteri are similar to those produced on other parts of the body.
5. That it is an operation completely devoid of danger, and that it does not cause any unpleasant symptom towards the rectum, uterus, or other neighboring organs.
6. That irritation of the bladder is not necessarily a barrier to blistering the cervix uteri, as this unpleasant symptom is sometimes removed by it.
7. That enlargement of the cervix or body of the uterus from engorgement, or hypertrophy, is not removable by blistering the cervix alone, but that it acts well sometimes in such cases as an adjuvant to other treatment.
8. That the best and most speedy way of blistering the cervix uteri is by a strong solution of cantharides, well and quickly rubbed in with a camel's-hair pencil.
9. That the combination of some sedative or anodyne with the blistering fluid is essential to prevent pain.
10. That chloroform, with gutta percha, is preferable to any other medicament for combining with the blistering fluid, as in the first instance it increases its vesicating powers, and afterwards relieves and removes the pain thereby induced.

ART. 153.—*A remarkable form of Prolapse of the Pelvic Viscera.* By Dr. MONTGOMERY, late Professor of Midwifery in the School of Physic in Ireland.

(*Dublin Hospital Gazette*, March 15, 1857.)

"About ten years ago," says Dr. Montgomery, "I was requested, by an eminent surgeon, to visit with him a lady of high hysterical temperament, and otherwise in miserably delicate health; into all the particulars of which I need not now enter, but confine myself to one fact connected with her case, which was very extraordinary, and without parallel within my observation or reading. It was stated to me that she was subject to prolapse of the rectum, to an unusual degree, and without any discoverable accompanying disease of the bowel; that the uterus descended at the same time; and that she could, at any time, by a voluntary effort, produce the displacement of both parts.

"This I found to be the fact; and, while I stood by the bedside, the lady, at my request, caused the descent to take place, while I carefully examined what occurred; and, to my astonishment, I found that the first step in the process was the descent of the uterus against the posterior wall of the vagina, which it carried before it into the rectum, into which it was received, until completely invaginated therein, and then expelled through the anus, surrounded, of course, by the displaced posterior wall of the vagina and the anterior wall of the rectum.

"I cannot say what became of the case afterwards, as I saw it only on the one occasion."

ART. 154.—*On the use and abuse of Pessaries in Prolapsus.* By Dr. GIBSON.

(*Newcastle and Gateshead Pathol. Transactions*, 1856.)

Of all the displacements of the uterus, prolapse is unquestionably the most com-

mon. We may go further, and say, that of all the diseases of married women, prolapsus uteri is the most frequent. Nevertheless, it is only where the displacement is great that much inconvenience is felt, as a general rule; and usually the prolapsus has been in existence a considerable period before the descending uterus has advanced far. Prolapsus vaginae is not a common disease, without a greater or less amount of descent of the uterus, and probably never occurs extensively without displacement of the bladder, or rectum, or both. When the uterus has descended from its position at the brim of the pelvis, the abdominal contents press upon the organ as they did before its descent, and the pressure of the abdominal muscles is rather increased than the contrary. Vaginal cystocele and vaginal rectocele are almost invariably associated with tumors, and as the vaginal prolapse increases, the cul de sac (formed by the rectum or the bladder, as the case may be) is also increased, and ultimately it becomes difficult to empty the rectum or the bladder completely. Hence it is palpable that the tendency of these displacements is from bad to worse. The facility with which the early progress of prolapsus uteri may be checked by pessaries and the like, has undoubtedly exercised a baneful influence upon the study and treatment of the disease, whilst with many practitioners the unhappy results of the indiscriminate employment of the pessary have had the effect of removing this instrument from their practice altogether; and I venture to submit that the indiscriminate use of the pessary is greatly more injurious than its disuse altogether. One bad consequence of the use of the pessary is the amount of irritation set up by its persistent pressure—irritation in the walls of the vagina, in the bladder, and in the rectum. Another is the expansion of the vagina consequent upon its continued pressure; from hence results excessive dilatation of the vaginal tube, relaxation of its coats, excoriation, leucorrhœa, &c. &c. Another effect, and often the most serious of all, is the pressure of the pessary upon the os and cervix uteri; hence the production here of inflammation, ulceration, hemorrhage, and a whole host of evils. Still it is undoubtedly true that, by careful management, the pessary is a most useful instrument. I recommend a pessary, which, I think, will obviate many of the objections urged against its use—light, clean, compressible, cheap—the vulcanized india-rubber ball, used as a toy by children, having a peg at the aperture and a loop for easy removal. This, with a well-adapted bandage externally, will relieve very many cases of prolapsus. An excellent pessary is made of sponge, with a loop of tape passed through it for its easy withdrawal. It should be somewhat excavated before and behind, and may be (where small size is a great objection in introduction) dipped in a solution of gum, and compressed by tape or twine, as in the ordinary manufacture of the sponge tent. When dry, and the compressing tape or twine removed, and the surface smoothed with a sharp knife or scissors, it is duly oiled, and passed into the required position in the vagina. The medicated pessary is much neglected, and may be made to fulfil very many indications; indeed it is self-evident that the persistent application of any given medicinal agent must be vastly more influential than the brief application of such agent by way of injection, the ordinary form of application. The sponge pessary may in this wise serve a double purpose. I say nothing of recumbent posture, cold sponging, or bathing, food, air, exercise, tonics, aperients, &c., my experience in these matters differing little from that of almost all modern writers upon the subjects under consideration. My experience of the use of caustics—chiefly nitrate of silver—to the walls of the vagina, is not satisfactory; in mild cases they are, for the most part, not indicated, and in the severe forms they appear to me unequal to the requirements of the cases. I have in a few cases applied solutions of iodine in chloroform, ether, &c., to the vaginal surface, but here also I have not met with any commendable success.

Everything considered then—the progressive tendency of the diseases from bad to worse—the acknowledged difficulty in their treatment, their frequency, &c.—it becomes desirable to know whether other means, beyond those ordinarily employed, are not to be found, which shall relieve or cure those forms of disease which have resisted ordinary treatment. The agency of the knife has not had fair scope, and this principally from two causes. 1. The repugnance of the patient and the practitioner to such active treatment of these delicate organs. 2. The possible destruction of these organs as agents in copulation and parturition. The first objection

need not be combated here by me; and the second is more ideal than real. It is, indeed, true that the passages have been extensively interfered with, as in the case to which I shall, in a moment, direct your particular attention. But it is also true, that in many instances well fitted for operative interference, the genital canal will admit of very extensive contraction without detriment, or with little detriment to copulation or parturition—that these objections very often do not hold, as in the aged and in the widowed—and that the distress of the disease is often so great, that copulation and parturition are entirely out of the question.

Operative interference may be, and has been, varied much by the caprice of the operator, or the requirements of the patient; but it may be stated, generally, that the aim of operators, hitherto, has been to produce contraction in some part of the genital canal. Dieffenbach removed an oval piece of mucous membrane from the side of the vagina, and brought the edges of the wound together by sutures. Baker Brown performed a somewhat similar operation, but on a smaller scale—and then, in addition, pares the edges of the labiæ inferiorly, and brings the raw surfaces together. The latter part of Baker Brown's operation has been alone performed; and all have been attended with a measure of success. I have performed two operations with the knife and ligature, for the relief of these affections. One, which has been performed by many others, consists of removing strips of mucous membrane from the sides and back of the vagina, and bringing and sustaining the edges of the wounds in contact, by means of sutures. This operation has been successful with me, but I have only performed it once.

The operation to which I desire particularly to direct attention, has not been, so far as I am aware, performed by any person except myself. The patient had suffered for sixteen years from prolapsus uteri, and for several years, from vaginal cystocele and rectocele, and had undergone treatment of various kinds, from time to time. Moreover, a fibrous-pedunculated tumor, one inch and a half in length, was found attached to the posterior lip of the os uteri; this was easily removed by ligature and the bistoury. The patient was afterwards confined to the recumbent posture for a few days, and then the operation for the cure of the prolapsus was performed. The patient being placed in the ordinary position for lithotomy, and the genital canal fully exposed, an incision was carried from the median line posteriorly (about two inches and a half above the posterior labial commissure) forward, beneath the arch of the pubis, to the margin of the labium anteriorly on each side; from these points downwards the vagina and vulva were completely denuded of mucous membrane by a careful dissection with the scalpel. This part of the operation being satisfactorily completed, three interrupted sutures brought and retained the lateral halves of the upper lines of incision together. Two other interrupted sutures were inserted into the anterior margin of the denuded surfaces, whilst three deeply-placed quill sutures kept the lateral masses firmly in contact. The patient was then removed to bed, and a mild opiate given.

The urine was regularly drawn off twice a day for the first ten days. The bowels were acted upon by enema on the third day. Considerable inflammation resulted from the operation, but ablution with warm water, injection of the vagina by means of a syringe and catheter with warm water, a rigid observance of the horizontal position, and simple food, were found equal to the requirements of the case. The first suture was removed on the seventh day, and on every second and third day from this date another suture was removed. The patient rose from her bed on or about the twenty-first day, and gradually, from this time, assumed the active duties required of her by her household. At the present hour she is quite well.

ART. 155.—*Case of Retroversion of the Uterus.*

By Dr. D. MACLEOD, of Kilmarnock.

(*Glasgow Med. Journal*, Jan., 1857.)

In this case the mother died undelivered in the tenth month of her pregnancy. Such cases are of extreme rarity.

CASE.—Mrs. M—, æt. 40, about four months advanced in her third pregnancy, was seized on the evening of the 25th July, 1855, shortly after lifting a heavy weight, with acute pain in the hypogastric region, accompanied by bearing down and a feeling of distension, in a situation at the lower part of the back, corresponding to the hollow of the sacrum.

Frequent fruitless attempts at micturition soon followed the above symptoms, for the relief of which the introduction of the catheter was had recourse to, which was continued by the medical gentleman who at this time attended her, for about three weeks, and by a midwife, tutored to the use of the instrument, for three weeks longer. By this time she regained the power of urinating voluntarily. The pain in the lower part of belly, already referred to, was temporarily relieved by the application of a number of leeches, and difficulty at defecation by laxative medicines.

The cause of her illness, however, remaining yet undiscovered, she became gradually worse. Anorexia, nausea, and vomiting, flatulence and feebleness of pulse, supervened. From these constitutional symptoms she continued to complain for upwards of five weeks, at the end of which time she experienced a partial mitigation of her sufferings.

About the beginning of October she had two profuse attacks of uterine hemorrhage, after which she became much emaciated, and greatly reduced in strength. From the sudden diminution of the size of the abdomen after the first discharge of blood, it was supposed the liquor amnii had also escaped. This supposition, on inspection after death, was found to have been correct, for the uterus contained but very little fluid.

On the 15th of October she was taken ill with the pains of labor. Dr. Young, who now saw the patient for the first time, found, on examination *per vaginam*, the canal of that passage much shortened, and taking a curved direction forwards and upwards. The finger, on its introduction, came in contact with a firm, but slightly elastic globular tumor, which felt about the size of a foetal head at the seventh month, and occupied the hollow of the sacrum fully. This globular tumor was found, on further examination, to be the foetal head, not felt, however, through the os uteri, as usual, but through a thin membranous partition, evidently the posterior wall of the vagina, which was reflected over it. The application of the stethoscope, to the abdomen at this time, confirmed the suspicions of the mother—already a few days existing—as to the death of the infant.

Dr. Borland, who at this time visited the patient, in consultation with Dr. Young, found the displaced os uteri situated about an inch above and behind the symphysis pubis, a little to the left of the mesial line, and open to an extent that would hardly admit the tip of the index finger. It was reached with the greatest difficulty.

The nature of the case being now clearly understood, the usual means for rectifying the position of the uterus were resorted to, but failed. Every attempt at elevating the fundus, *per rectum*, created so much agony, that that method had to be relinquished, after a few steady trials.

The pains continued for about twenty-four hours. At the end of that time they ceased, and although recurring, of normal frequency and strength, during that period, produced no dilating effect on the os uteri. The different unsuccessful attempts at replacing the uterus exhausted the patient so much, that the propriety of any further interference was precluded.

Under these circumstances, it was deemed the most prudent plan to improve her general condition, in the hope that she would be better able to bear any future attempts at reposition. With this object in view, nourishing diet, quinine, and wine, were prescribed, with occasional opiates, to check diarrhoea, which by this time assailed her.

This mode of treatment was coincided in by Professor Pagan, of Glasgow, who a few days after, was consulted by letter regarding the case.

Her condition was but slightly improved, when she was again seized with labor on the 30th December following. Reposition was several times unsuccessfully attempted, in various positions of the body, by the two forefingers of the left hand introduced into the rectum, and pulling down the os uteri by a blunt hook inserted into it, which was made for the purpose. The patient felt so weak before and after the efforts made at reposition, that she could not be safely put under the influence of chloroform. Consequently, the whole hand, as recommended by some authors, was not introduced into the rectum.*

* See Ashwell on 'Diseases of Women,' p. 619, who says, "For my own part I have so great a dread of the continuance of retroversion, that I would not hesitate to introduce the whole hand into the rectum, and exert very considerable power to accomplish this desirable object."

Her pulse became now more feeble and quick—150 per minute—and she perspired profusely. Diarrhœa, which, a short time before this, afflicted her, continued till she died, undelivered, on the 3d of January, 1856.

The following are the morbid appearances found on examination of the body twenty-four hours after death :

On laying open the abdominal cavity, the omentum was found completely absorbed. The anterior wall of the uterus was adhering to the parietes of the abdomen. Laterally, it was attached to the iliac passage; superiorly, it was adherent to the central portion of the transverse arch of the colon. At this central point of attachment, the intestine was slightly ruptured. It (the opening) would barely admit the point of an ordinarily-sized goosequill.

No extravasation of the contents of the bowel, that could be detected, took place by this opening. Posteriorly, the fundus was firmly bound down to the rectum and hollow of the sacrum by old adhesions. The os uteri was found undilated, in the exact position previously described. The uterus was very thin, and presented a slate-gray appearance. On being opened, it was found to contain the remains of a fœtus—about the size of one at five months—placenta and membranes, along with a small quantity of putrid liquor amnii. The whole of the uterine contents had undergone decomposition to a very great extent; the features of the fœtus were totally obliterated: the body, although also much decomposed, retained its natural formation. The bladder appeared healthy, and contained a small quantity of urine.

ART. 156.—*The History and Statistics of Ovariectomy, and the circumstances under which the operation may be performed.* By DR. GEORGE H. LYMAN.

(Philadelphia Medical Examiner, Dec., 1856.)

This is a notice of a dissertation to which the prize of the Massachusetts Medical Society was awarded in 1856. According to this notice this dissertation gives the particulars of 300 cases (a larger number than was ever brought together by any previous writer), and it has throughout the marks of care and accuracy.

Of the 300 cases collected by Dr. Lyman, 23 were performed by Dr. W. L. Atlee; 32 by Dr. F. Bird; and 50 by Mr. Clay—105 cases by three operators—one-third of all the cases on record! Of Dr. Atlee's cases, the operation was completed in 19; in 4 not completed on account of adhesions, &c.; of the complete operations 11 died, or 58 per cent.; one case, tabled as a recovery, died four months afterwards of erysipelas; of the 4 incomplete cases, 1 died. Of Dr. Bird's cases 12 were complete operations, and 20 incomplete; of the complete 4 died, or 33 per cent. Of Mr. Clay's cases 40 were complete, and 9 incomplete operations; of the complete 14 died, or 34 per cent.; of the incomplete 2 died.

The following are some of the facts gathered by the author :

" In three-tenths of the cases, the operation could not be completed.

" The rate of mortality in all the operations was 40·13 per cent.

" In seven-tenths of the cases, the operation was completed, with a resulting mortality of 42·78 per cent.

" In the unfinished operations, the mortality was 30·68 per cent.

" The proportion between the whole number of recoveries, *after the removal of the tumor*, and the whole number of operations undertaken in hope of such a result, we find to be as 39·66 to 100, or less than two-fifths!

" Adhesions caused the abandonment of the operation in 22·06 per cent. of the whole number, or caused 77·27 per cent. of the failures.

" No tumor was found in nearly 3 per cent. of the whole.

" Where adhesions complicated the removal, 47·82 per cent. died; where no adhesions complicated the removal, 32 per cent. only died.

" Of the whole number of short incisions, 30·76 per cent. died; of those completed, 38·33 per cent. died; of those not completed, 22·80 per cent. only died.

" Of the whole number of long incisions, 41·95 per cent. died; of those completed, 41·46 died; and of those not completed, 45 per cent. died.

" Previous tapping does not always cause adhesions.

" As far as these cases go, the mortality is least between the ages of fifty and sixty, and greatest under twenty.

"The mortality is least when the disease is of between three and four years' duration.

"There is but little difference in the mortality between the married and single.

"The right ovary is more often diseased than the left, though less so than often stated.

"Of the above fatal cases, 42·35 per cent. were from peritonitis, 23·52 per cent. from hemorrhage.

"Death ensued, upon an average, the eighth day; the average of deaths from peritonitis being also the eighth day; and those from hemorrhage in twenty-two hours.

"And finally, in more than 10 per cent. of the cases, important errors of diagnosis occurred."

The following summary will afford our readers the conclusions at which the author has arrived:

"1. The mortality attendant upon ovariectomy is no greater than it is after other capital operations.

"2. The mortality resulting from extensive incisions of the peritoneum is generally over-estimated.

"3. Fully developed cystic disease of the ovarium tends rapidly to a fatal result.

"4. No method of treatment heretofore devised for it is so successful as extirpation; excepting, possibly, that by injection with iodine, of the results from which we have as yet insufficient statistics.

"5. The operation is unjustifiable in the early stages of the disease.

"6. After active development has commenced, with the supervention of constitutional symptoms, the sooner the operation is performed the greater the chance of recovery.

"7. No rule can be laid down as to the length of the incision, other than the general one,—that the shorter it is, the less the mortality; and that, therefore, the primary incision should always be small, and extended afterwards as may be necessary, according to the exigencies of each particular case.

"8. If, after the operation is commenced, extensive adhesions should be discovered, either the complete abandonment of the intended extirpation, or the attempt to cause suppuration and gradual contraction of the cyst, by means of a permanent external opening, are to be preferred to the division of the adhesions and completion of the operation as originally designed."

ART. 157.—A case of Vesico-vaginal Fistula treated by Bozeman's suture.

By Dr. WALLACE, Surgeon to the Greenock Infirmary.

(*Glasgow Med. Journal*, April, 1857.)

This case is another instance of the successful adoption of a plan which was first carried into practice in this country by Mr. Baker Brown of St. Mary's Hospital (v. 'Abstract,' Vol. XXIII).

CASE.—A. M—, a farm-servant, unmarried, and twenty-nine years of age, about a fortnight after a first labor, which extended over several days, and which was brought to a close only by the use of instruments, was found to have a constant dribbling of urine. For the relief of this she was admitted, on the 2d of January, 1856—five weeks after delivery—into the wards of the Infirmary, at that time under the charge of my colleague, Dr. Henry. According to the journal she was then discovered to have a ragged opening in the bladder, about three-eighths of an inch in diameter, and about half an inch in front of the anterior lip of the uterus, the discharge of urine being almost constant, and quite uninfluenced by position. On the 10th, the edges of the aperture were touched with the actual cautery, and the patient enjoined to lie half on her face, with a catheter fixed in the bladder in the usual way, and with a large sponge placed in such a manner as to suck up the urine as it escaped. In the latter respect, however, the patient was not easily made to submit, so that some days she was with the instrument, and some days without it. The cautery, notwithstanding, was reapplied on the 24th of March, as well as on the 10th and 27th of February, and with so much

benefit as to allow the patient, when lying on either side, to retain her urine up to a certain amount. After this, and up to the 1st of May, when the patient was transferred to my charge, the cautery was repeated six times, and after intervals varying in duration. I then found that the opening had contracted to a little less than the diameter of a small-sized quill, and that the cicatrization had proceeded almost entirely from behind forwards, the lips of the uterus, being, besides, rather irregular, as if from previous laceration, and the perineum bearing marks of having been partially ruptured.

As improvement from the use of the cautery had been so decided, I now resolved on its continuance, and had recourse to it accordingly on the 18th of May, 14th of June, and 18th of July, and with so much success that on an examination made on the 6th of August, the opening was found to have contracted so as to admit merely the point of a fine probe or stocking-wire. Indeed, as the fistula was in the centre of a transverse groove, it was at first made out with difficulty, and only after causing the patient to press down, so as to allow a drop of urine to escape. The patient at this time was able to lie on either side for several hours without any dribbling, but, on attempting the erect posture, the urine trickled away as much as formerly. I still continued, therefore, the occasional employment of the cautery, by means of a stocking-wire brought to a white heat, but, unfortunately, without any further amendment, although the patient, for a considerable time after each application, was made to lie on her left side with a catheter fixed in the usual way, and attached to an india-rubber urinal. There was, it must be admitted, at a certain stage after each cauterization, an appearance of cure; but this invariably turned out to be deceptive, the urine evidently escaping quite freely on the very first tendency to contraction on the part of the granulations.

Despairing now of any farther benefit from the use of the cautery, I thought of attempting palliation merely. I accordingly procured for the patient an india-rubber bag, having a flexible tube attached to it, and fitted with a stop-cock. The bag being introduced into the vagina, was inflated through the tube by means of a small air-pump, and to such an extent as to fill the passage completely, and prevent the escape of urine when the patient was in the erect posture. When thoroughly filled, the cock was closed, and the patient allowed to go about at will. The distension, however, was so irksome, that the employment of the apparatus had, after a few days, to be abandoned altogether, and that, moreover, independently of the excoriation produced in the vagina by the presence of the foreign body, to guard against which the bag was removed twice a day, and the passage carefully washed out with tepid water.

Notwithstanding these failures, I did not think of trying any form of suture till the beginning of December; for I still held on to the hope that, as the cautery had been successful in reducing the opening from a diameter of three-eighths of an inch to that of a common pin, it would ultimately, with patience and perseverance on my part, produce complete closure. At all events, I saw nothing in the method of Dr. Sims to divert me from the cautery. The publication, however, of Mr. Brown's case of cure by the method of Dr. Bozeman, as well as the simplicity of the plan itself, led me to the determination to have recourse to the knife. Accordingly, on the 13th of January last, I proceeded to operate, with the aid and concurrence of my colleagues. The patient having been brought under the influence of chloroform, was placed in the lithotomy position. The walls of the vagina were then held separate by two of the assistants, by means of two ordinary tongue-depressors. In this way, the fistula was brought readily into view. The mucous membrane, to the extent of an eighth of an inch around it, was then dissected off by the long-handled knife and forceps recommended by Mr. Brown, and figured by him at page 97 of his treatise. After this, a small needle threaded with fine silver wire, was made, by the aid of a *porte-aiguille*, to pass through the vaginal wall on one side of the opening, from about half an inch in front of the dissected edge, to a line drawn transversely through the opening. The needle was then made to transfix the posterior part in the opposite way, the mucous membrane of the bladder being, of course, carefully avoided. The thread having now been drawn through, and both ends allowed to hang out of the vagina, the needle was removed, and a similar proceeding followed with a second wire on the other side of the opening. The ends of each wire were then slipped through a perforated presser, which was passed down, and thereby brought

the scarified edges in exact apposition. A silver plate, nearly oval in shape, and perforated in two places about a quarter of an inch apart, was then slipped over the wires, and passed down upon the closed edges. A perforated shot was next passed along each wire, and after being pressed down, was clamped by means of bell-hangers' forceps. The wires being then cut off close by the shot, a piece of lint, soaked in oil, was inserted in the vagina, and the patient afterwards placed in bed, where she had an S-shaped catheter introduced into her bladder, and attached by a flexible tube to an india-rubber bag, strict injunctions being given her at the same time to lie on her left side. Two grains of opium were given immediately after the operation, and one grain ordered at the rate of every four or six hours; the diet to consist of tea and beef-tea; two days afterwards, the lint was removed, and the vagina washed out with tepid water. The patient having slept well on the preceding nights, and being altogether in good condition, was now ordered to take the opium only night and morning, to have full diet, with a glass of sherry, and to have the vagina washed out once a day. Under this treatment she progressed favorably, no inconvenience being experienced from the presence of the catheter, which, from its shape, required no retentive bandages, and which was taken out twice or thrice a day, in order that it might be cleaned, and that the bag might be properly emptied. Nine days after the operation, the wires were cut off by means of long scissors, and the plate and wires carefully removed. Perfect union was then found to have taken place, except in the situation of one of the wires, which had nearly sloughed out. The opium was now withdrawn, and in two days more the catheter entirely removed. The patient's bowels were then also acted on for the first time since the operation, by an injection, after which she was found able to retain her urine in any position, and to keep it for four hours at a time. About a week afterwards, cicatrization was almost entirely complete, and the patient able to go about, and to keep her water as well as if she had never labored under such an affection as that for which she had been treated. At this time she might have been dismissed; but, for the sake of greater security, I kept her in the ward till the 1st of March, when she obtained a situation as a servant, in which capacity she is still employed.

ART. 158.—Cure of Vesico-vaginal Fistula by bruising the Vaginal Mucous Membrane. By Dr. BERTEL.

(*L'Union Méd.* Feb., 1857; and *Med.-Chir. Review*, April, 1857.)

Dr. Bertel records a case of cure of vesico-vaginal fistula by a method which consists in pinching and crushing the vaginal mucous membrane. A woman, aged fifty, had suffered from a fistula for fourteen years. It was deeply seated, and engaged the body of the bladder on a level with the os tincæ. It was capable of admitting the tip of the finger through the vagina into the bladder. It was slightly oval; its larger extremity was directed towards the fundus of the bladder; its edges were somewhat thickened and hard; it was not funnel-shaped. The lesion followed a laborious delivery. M. Bertel applied a pinching instrument to nip the edges of the fistula together, which he promises to describe hereafter when made more presentable and scientific. On the third day it was found that no urine escaped into the vagina. On removing the instrument, the opening was found closed. In its place was a ridge of reddish-brown color, easily bleeding, half the size of a cherry. Henceforth all urine passed by the urethra—no opening could be detected. The cure Dr. Bertel describes as perfect.

ART. 159.—A case of painful swelling of both Legs resembling Phlegmasia Dolens. By Mr. HENRY LEE, Surgeon to King's College Hospital, &c.

This case was brought before the Royal Medical and Chirurgical Society on the 9th December, 1856.

CASE.—The patient was seized, while a patient in the Brompton Hospital, with pain, tenderness, and swelling, in the upper part of both thighs; the symptoms subsequently extended down the extremities, the legs and feet becoming oedematous. The right limb was the first affected. There were no acute inflammatory symptoms. The affection continued until her death, which occurred about seven weeks after the first appearance of these symptoms. On examination after death, the lungs were

found infiltrated with tubercles. The left iliac and femoral veins were completely plugged. The right femoral vein was found to be occupied for eight or nine inches by a continuous false membrane, and obstructed, more or less perfectly, at different parts by fibrinous deposit. The false membrane was nowhere so adherent to the lining membrane as not to be easily separable from it; and there were portions of the latter over which the false membrane passed which were in no way altered from their natural character.

Mr. Lee argues that such a case could not be regarded as having a local origin, and consequently a starting-point from which inflammation might extend, as is stated to be necessary in phlegmasia dolens, which affection his case accurately simulated in all respects but the absence of any uterine affection; and also he contends that phlebitis may arise independently of any extension of inflammation, and in such instances can only have for its cause the stagnation of the vitiated blood in the vessels. The author quotes a case recorded by Dr. McClintock (v. "Abstract," vol. XXIV), in which inflammation of the large veins of the right side of the neck took place in a woman who had a puerperal affection; and details several experiments on dogs, instituted for the purpose of proving his arguments.

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 160.—*On the remittent Fever of Children.* By Dr. J. LEWIS SMITH.

(*New York Journal of Medicine*, Jan. 1857.)

The following considerations have convinced Dr. Smith that this complaint, in a large majority of cases, is miasmatic in its origin, and not depending upon dietetic errors and other causes of intestinal irritation:

"1. The disease is very prevalent in spring and autumn, and rare in midsummer and midwinter, like malarious affections. There are certain streets where I have known it to prevail almost like an epidemic in the vernal and autumnal months. If the disease were, as Dr. Condie states, 'in every instance, either a gastro-enteritis, an ileitis, or an entero-colitis,' how can this influence of the seasons be explained?"

"2. Often, not always, the remissions are more marked than would be likely to occur in a symptomatic fever. The child may appear almost well in the morning, but in the afternoon and evening, exhibit such intensity of symptoms as to cause the greatest anxiety on the part of friends.

"3. The symptoms are not altogether such as we should expect to find in a purely local affection. The patient will, it is true, when asked where he feels the pain, sometimes place his hand on the abdomen, and pressure upon the abdominal parietes not unfrequently produces great distress. Dr. Condie alludes to this tenderness, evidently believing it to be a symptom of inflammation. But I have always been satisfied that it was neuralgic, from the fact that pressure on the lumbar vertebrae, and frequently on the chest and limbs, caused as much suffering as when it was made on the abdominal walls. The patient, if old enough, will complain, too, of aching in the head, back, and limbs, which is more the symptom of an independent fever than of inflammation.

"Again, constipation is ordinarily present, unless in the last stages of the disease. Intestinal irritation or inflammation, sufficient to cause so intense and protracted a fever as is often present, would be more likely to cause diarrhoea.

"4. Children, even nursing infants, take intermittent fever; why, then, may they not take remittent fever, from malaria? In my class at the dispensary, children with these diseases are frequently brought in together.

"5. I have found that measures directed to the alimentary canal, beyond simple purgation, do more harm than good. They fail to ameliorate symptoms; they weaken and distress the child. Moreover, when remissions occur, quinine will materially abridge the disease.

"6. Death seldom occurs from this affection. In one or two fatal cases which have fallen under my observation this result followed convulsions and coma; and Dr. Stewart remarks, 'Dissections have furnished but little light on the morbid condition of the system in remittent fever; for, on a fatal termination, the transmission to the brain is the ordinary course to the disease.' The mode of death, then, and

the post-mortem appearances, do not comport with the doctrine, that the intestines are the seat of the morbid process.

"Dr. Condie does not agree with Dr. Stewart, but attributes death to inflammation of the intestines. I do not think that the remittent fever which I have treated, if uncomplicated, ever terminates in this way, for I have seen a case in which abdominal symptoms did not yield to simple measures.

"7. Continued fever of the adult is of rare, and infantile remittent of frequent, occurrence in the locality of my practice. The latter is not then identical with the former, as it appears to be in London and Paris, from the descriptions given by Rilliet, Barthez, and West.

"The above facts appear to me conclusive that the form of infantile remittent fever, which it has been my lot to treat, has been generally of a miasmatic character

"It is very important to understand the nature of this affection, as the treatment will vary according to the theory we adopt. If, living in a malarious region, we embrace the Broussaian views of the American authors whom I have cited, and treat the fever as a local disease, we shall fail to ameliorate symptoms, and be mortified and discouraged by the result, if I may judge from my own experience. My reliance at present is mainly on expectant measures, till remissions occur, and then on the exhibition of quinine. In cases thus managed, convalescence has been more speedy and certain, than when opium, calomel, and counter-irritation have been employed to remove intestinal irritation or inflammation.

"At the risk of appearing presumptuous, I have thus presented a theory of infantile remittent fever, not, indeed, novel, for Taylor attributes one variety of it to miasm, but different from that contained in any American and most European treatises on diseases of children. I am the more anxious that the true nature of the disease should be understood, because I believe that the accepted doctrine is exceedingly pernicious to practitioners in malarious regions, and especially to the younger members of the profession who rely more on books than experience for guidance. The fact, too, that remittent fever has been in my practice the most frequent affection of early life, in the vernal and autumnal seasons, gives additional interest to the subject."

ART. 161.—*On the Diagnosis of Apneumotosis (pulmonary collapse).*

By Dr. GRAILEY HEWITT.

(*Lancet*, March 28, 1857.)

It being a fact, that one-third of the mortality in the second year of life arises from affections in which the bronchial mucous membrane is implicated, the importance of diagnosing the presence of what may be considered the fatal element in these affections—apneumotosis, is quite evident. The effects produced on the system generally by the supervention of this condition, involving, as it must do, a serious diminution in the *degree* of the respiration, are then briefly described. The *general* symptoms observed in particular cases, so far as they are diagnostic of the presence of apneumotosis, are next considered. Children of weakly constitutions are particularly liable to be attacked with that form of bronchitis in which, as a sequence, apneumotosis takes place. In such cases the febrile stage of the bronchitis is of brief duration, and a state of prostration soon ensues, characterized as follows: The skin becomes pallid, or dull and shrivelled; its temperature sinks. The dyspnoea is aggravated, but altered in character; the breathing is very shallow; the rhythm of the movements "expiratory," very little air entering the chest at each inspiration. The pulse is very weak; the eyes half closed; the lips blue; the cough is extremely feeble. This is a typical description of the symptoms in cases where apneumotosis has followed bronchitis; but many modifications of these are observed in different cases. The shallowness of the respiration, the peculiar kind of dyspnoea, and the pallidity of the skin, are diagnostic signs of great value. There is a great resemblance afforded by the condition just described and that of the cold-blooded animals, the respiration physiologically considered, being in both cases small in amount. The congenital condition described by Jürg *as atelectasis* differed from apneumotosis, inasmuch as the latter change occurred *after birth*, and affected portions of lung which had once been properly aerated, although the two conditions otherwise resembled each other. The differential diagnosis

of atelectasis and apneumotosis would be based on a consideration of the history of the case in question.

The diagnostic data derived from a *physical examination* of the chest next form matter for deliberation. The diagnosis of a chest affection in early life, the physical signs alone being considered, is shown to be by no means easy. By *inspection* of the chest in cases of apneumotosis, the ribs, at their junction with the cartilages, and the cartilages themselves, are observed to be drawn in during inspiration; the lung does not expand, and the descent of the diaphragm produces a falling in of the thoracic walls at those parts which are the most yielding. At a point two inches below and outside the nipple, the walls most readily give way to atmospheric pressure. The antero-posterior diameter of the chest is then increased, the transverse diameter diminished. Retraction of the chest walls is, in conjunction with certain symptoms, of value in a diagnostic point of view. It is not observed to so great an extent when emphysema to a notable degree exists, a circumstance which is not uncommon. *Percussion* gives occasionally information of great value, although the irregular manner in which the apneumatic portions are scattered over the surface of the lobes renders it often difficult to establish the existence of a marked degree of dullness. *Auscultation* shows absence of respiratory murmur when the portions of lung affected are of considerable extent. There is generally heard, however, a rhonchus, which has a somewhat grating character. Rhonchi, more or less fine, are also usually discoverable, but the fine crepitus of true pneumonia is not heard. The respiratory murmur is often bronchial in character over the affected portions. The absence of continued and persistent heat of skin, as well as of the true pneumonic crepitus, distinguish cases of apneumotosis from cases of *pneumonia*, in addition to which the rarity of this latter affection in early life affords evidence of a presumptive nature against its being present in a particular case. The history of the case will in most instances be sufficient to distinguish apneumotosis from *tubercularization of the lungs*. The remarks now offered as to the diagnosis of apneumotosis are to be regarded as suggestive only, a larger experience being necessary in order to do more than indicate the general principles on which the diagnosis in question is to be arrived at. The chief points alluded to in the paper are illustrated by means of drawings of the lungs of patients who had been under the author's observation during life.

ART. 162.—*Infarction of the Renal Tubuli with Urates in an Infant.*

By Dr. WILLSHIRE, Assistant-Physician to the Charing-Cross Hospital.

(*Assoc. Med. Journal*, Nov. 1, 1856.)

At a recent meeting of the Medical Society of London, Dr. Willshire exhibited the kidney of a child, showing commencing "infarction" of the tubuli uriniferi by uric acid salts. It illustrated a point, he said, in the history of commencing extra-uterine life, which had been lately much discussed in Germany, but had been uninvestigated in England and France. Dr. Willshire believed that this was the first occasion the particular condition of the renal organs, now before the Society, had been publicly demonstrated. The present specimen was also interesting, from the fact that it formed the third which had been recorded of a necessarily small subgroup of examples in the general class of cases to which he alluded. It was taken from a child that had died *in partu*, after having breathed, and went to show that renal infarction might, at least, commence in the living child after labor had begun, and previously to its entire separation from the maternal system. Hitherto, 428 infants had been examined in connection with this question: of these, 113 were dead-born, and not one exhibited the renal infarctus; 206, living from one to sixty days, exhibited it; two dying during birth (the present being one), and one soon after the birth, showed the infarction commencing. The remainder presented no traces of it. Many points of much interest were connected with the subject, and not the least so the question as to how far the condition of the kidney he exhibited could be employed in a forensic argument in a case of suspected infanticide. Dr. Willshire stated that circumstances had occurred in connection with the suprarenal capsules in the present case which led him to attach weight to the late statement of M. Brown-Séquard, that these organs have to do with pigment formation, and, consequently to support some recent views of Dr. Addison.

ART. 163.—*On the use of Belladonna in Incontinence of Urine.*
By Mr. BROOKE, Surgeon to the Westminster Hospital, and others.

(*British Med. Journal*, Feb. 21 and 28, March 7 and 28, April 1, 18, and 25, 1857.)

The following cases are calculated to confirm the practice, recently recommended by M. Trousseau (*v. 'Abstract,'* vol. XXII), of giving belladonna in these cases.

1. *Mr. Brooke's cases.*—*Case 1.*—Daniel D—, æt. 7, a pale delicate-looking boy, was admitted into the Westminster Hospital, January 21st, on account of incontinence of urine, which had existed for several months. He had been carefully watched, and several plans of treatment adopted, among which corporal punishment had not been forgotten. The urine dribbled from him by day as well as by night. He was ordered one-sixth of a grain of extract of belladonna, dissolved in a teaspoonful of water, three times a day; no fluid was allowed after 5 P. M.; and the nurse was ordered, as usual, to see that he passed urine at night. The plan was perfectly successful. After its adoption he only wetted his bed once, at night; and left the hospital, quite cured, three weeks after admission, making water only two or three times a day.

Case 2.—Frederick T—, æt. 17, an intelligent lad, was sent up from the country to be placed under Mr. Brooke's care for incontinence of urine. From his own statement it appeared that he rarely passed a night without wetting the bed. He had been under treatment for two months previous to his admission, but without benefit. On his admission (March 18th) he was ordered to take the sixth of a grain of extract of belladonna three times a day. A daily record of his case was kept; but with the exception of the first night, when he passed water once, he was not troubled in this respect again. In a fortnight from the time of his admission (March 31st) he was considered sufficiently recovered to be sent home again.

2. *Dr. Cowdell's cases.*—I have just had three patients under treatment—boys—aged respectively 12, 7, and 7.

I will dismiss the latter two first, as they were in private practice, and their cases were not closely watched; and, from the circumstance of the sight, in both, becoming early affected, the remedy caused some alarm, and was not perseveringly used. It must, however, be stated that, concurrently with the use of the belladonna, in one of these, a longer interval without incontinence passed than had ever been experienced before since it had existed.

I will detail the first case only. R. T—, æt. 12, presented himself as an out-patient at the Dorset County Hospital, Oct. 23d, 1856. He had not, since he was four years old, passed more than two consecutive nights without wetting his bed. I prescribed one-eighth of a grain of extract of belladonna in a mixture containing tincture of sesquichloride of iron and quassia. He began at once to improve; but, as I had advised that he should not drink after his dinner, and that he should be roused once or twice early in the night, I was not sure that the remedy had done anything. I increased the dose to one-fifth of a grain three times a day, and then he passed twenty-seven nights without once transgressing.

3. *Mr. Athol Johnson's case.*—Lavinia B—, æt. 8, was admitted as an out-patient at St. George's Hospital, under Mr. Johnson's care, in July last, on account of incontinence of urine. This infirmity had existed since birth, and she had frequently been under treatment for it, both in private and at St. Bartholomew's Hospital, without, however, deriving any material benefit. At the time of her admission, the urine was acid, and nothing particular was to be observed as to its composition. She used to pass it frequently in the day, and usually wetted her bed two or three times during the night. She was treated at first, up to October 29th, with purgatives, alkalies, and blisters to the sacrum, but without improvement being thereby obtained. It may be observed that there were no worms. At the above date, she was ordered one-eighth of a grain of extract of belladonna, night and morning. On November 22d, it is noted that the child had been doing very well since the use of the belladonna, and that she only passed urine in bed about once in a week. After this she did not attend regularly; and on February 11th, after an absence of more than a month, she again presented herself in much the same state as at first, the urine being again passed frequently. The belladonna was resumed, and the incontinence again materially checked, especially at night. On February

25th, the quantity of the drug was increased to one-sixth of a grain; and on March 18th, when last seen, she had not passed water in bed since the previous date.

4. *Mr. G. B. Masfen's case.*—M. B——, æt. 5, who had been under my care in St. Mary's Hospital, Manchester, at various times since February 6th, 1856, suffering from incontinence of urine, under a variety of treatment, and with, at the best, very trifling amendment, was again admitted on the 28th of January, 1857. He is a delicate-looking boy, but apparently healthy in all other respects than the disease for which he was under treatment. He had rarely passed a night, that his mother could recollect, without wetting his bed; and the treatment which had appeared to do him most good was abstinence from drink in the after part of the day; but this could not be successfully carried out in warm weather.

I prescribed an anodyne alkaline mixture, with an occasional drastic aperient, till having seen the report of Mr. Brooke's case, I ordered, on February 28th, one-twelfth of a grain of extract of belladonna to be taken three times a day, when a marked improvement immediately commenced, which continued till, after having the medicine for twelve days, there was no more appearance of the symptoms. He continued under the same treatment till March 21st, when I discharged him apparently cured. I shall keep this case under notice, and, should any relapse occur, shall not fail to place it on record.

While on this subject, I may mention that I wrote to a sometime patient of mine, who had consulted several eminent practitioners in various parts of the kingdom, and who seldom passed a night without wetting his bed, from birth to the age of sixteen, to suggest this remedy to him. He replied as follows: "The weakness with which I was afflicted so long, has at last left me entirely. . . . Very likely the sea-bathing at Boulogne did a great deal towards a cure, as I was not subject to it after I took a bath three times a week at six in the morning."

5. *Mr. Spencer Smith's case.*—Walter S——, æt. 8, was admitted into St. Mary's Hospital, under Mr. Smith's care, on February 14th. He had been operated on for stone three years before in this hospital, by the usual lateral incision, and left the house six weeks afterwards cured. No incontinence or other bad symptom then existed. Soon afterwards (but how long is not known), being then at home, badly fed and ill cared for, incontinence of urine came on. He passed water, at the time of his admission, thirteen or fourteen times in the course of the day, without pain or scalding, and his bed was constantly wetted at night. For eleven days he was treated with cod-liver oil and steel wine, together with good diet and the usual regimen, but no amelioration was noticed. On February 25th, one-sixth of a grain of extract of belladonna was added to each dose of his medicine, and he was ordered to take no fluids after 8 P.M. On the third day the nurse reported that he did not wet himself so much; and he continued to improve till March 8th, when he was nearly free from the symptoms, as he hardly wetted his clothes at all during the day, and did not pass water at all in bed. At this time he fell sick for a day or two, his appetite failed, and the stomach rejected food. The belladonna was omitted for five days, and a little acetate of ammonia mixture substituted. A marked relapse took place; his clothes were saturated with urine, and the usual ammoniacal smell became again evident about his person. The stomach had now regained its tone, and the former treatment was resumed and continued till April 14th, when he left the hospital greatly improved: he no longer wetted his clothes by day or night, and the only remaining inconvenience was that of more frequent micturition than can be considered quite healthy.

REPORTS
ON THE
PROGRESS OF THE MEDICAL SCIENCES.

January—June, 1857.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact of doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge,—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, ETC.

Reflections on the results of experience as to the symptoms of Internal Inflammation, and the effects of bloodletting during the last forty years. By W. P. ALISON, M.D., D.C.L., Emeritus Professor of Practice of Medicine, Edinburgh. ('Edin. Med. Journal,' March, 1856.)

Observations on the results of an advanced diagnosis and pathology applied to the management of Internal Inflammations, compared with the effects of a former antiphlogistic treatment, and especially of Bloodletting. By J. HUGHES BENNETT, Professor of the Institutes of Medicine and of Clinical Medicine in the University of Edinburgh. ('Edin. Med. Jour.' March, 1857.)

Reply to Dr. Bennett's Observations on the results of an advanced diagnosis and pathology in the management of Internal Inflammations. By W. P. ALISON, M.D., Emeritus Professor of Medicine, Edinburgh. ('Edin. Med. Journal,' May, 1857.)

A Reply to the preceding paper of Dr. Alison. By J. HUGHES BENNETT, M.D. ('Edin. Med. Journal,' May, 1857.)

THE Medical and Chirurgical Society of Edinburgh has recently been the scene of a *passage d'armes* between Dr. Alison and Dr. J. Hughes Bennett, upon the change which has taken place in the treatment of inflammatory affections. It is admitted by both combatants that the practice of bleeding in acute inflammations has, within a recent period, undergone a great change—that, whereas formerly it was the rule to bleed promptly, largely, and repeatedly, that now such bleeding is rarely practised and rarely necessary. According to Dr. Alison, antiphlogistic remedies, and more especially bloodletting, were formerly highly successful in arresting the disease, whereas now they are actually injurious; and the inference he draws is that inflammation itself is no longer the same—that its type, and more especially the febrile symptoms accompanying the inflammation, have altered from an inflammatory to a typhoid type, and that the practice has very properly changed accordingly. According to Dr. Bennett, on the contrary, this great revolution in treatment is the natural consequence of an advanced knowledge in diagnosis and pathology. In the first place, Dr. Bennett thinks that little reliance can be placed on the experience of those who, like Cullen and Gregory, were unacquainted with the nature of internal inflammations and the mode of detecting them. In the second place, he thinks that inflammation is the same now as it ever has been, and that the analogy sought to be established between it and the varying types of fever is fallacious. In Dr. Bennett's opinion, moreover, the principles on which bloodletting and antiphlogistic remedies have hitherto been practised are opposed to a sound pathology. How these principles are thus opposed will appear in what is said upon the natural progress of inflammation.

"If," says Dr. Bennett, "we watch the natural progress of inflammation in any of the textures of the body, we observe that it terminates in two ways, viz., 1st, by vital changes of growth of different kinds in the exudation, constituting what has hitherto been called suppuration, adhesion, granulation, cicatrization, the healing processes, &c. &c.; and, 2dly, by death of the exudation, which, if rapid, putrefies, producing gangrene, or, if slow, disintegrates, causing ulceration. The first series of changes are not destructive, but formative and reparative. Suppuration espe-

cially should be looked upon as a kind of growth, which enables the exuded and coagulated blood-plasma to be rapidly broken up, and eliminated from the economy. If so, instead of being checked, it should be encouraged as much as possible; a very different doctrine from what has hitherto prevailed. Again, everything that lowers the vital strength and weakens the economy, must impede the nutritive processes of growth, and tend more or less to a slow or rapid death of the exudation. Bloodletting, especially, has this tendency, and must, therefore, be wholly opposed to the rapid disappearance of inflammation; for example:

"If a bone be fractured, inflammation occurs around the injured part, and exudation is poured out, which undergoes vital changes, whereby ultimately it is transformed into bone. If soft parts are destroyed or removed, the exudation poured out from the injured vessels undergoes other vital changes, whereby it is transformed into fibrous tissue, constituting, first granulations, and then a cicatrix. After subcutaneous section of tendon, with separation of its extremities, the transformation is more perfect, producing, as in the case of bone, a growth exactly similar to the one which was injured. If a violent blow or injury has been received, a greater or less amount of exudation is infiltrated among the contused and torn tissues, which is transformed by cell-growth into pus, which, if it can be evacuated externally, is soon got rid of, but if not, is on the disintegration of the cells absorbed and excreted from the economy. If, under other circumstances, the pus is absorbed as rapidly as it is formed, the inflammatory swelling is said to be resolved or dissipated; if not, it collects in the form of a fluid to constitute an abscess. Surely it cannot be maintained that, in any of these cases, we can favor these reparative processes by bloodletting and lowering the strength of the economy. On the contrary, they have always been found to be best perfected in individuals of vigorous constitutions, whilst in scrofulous or broken-down and weak persons, they proceed slowly or not at all.

"But in internal inflammations, say of the lungs or pericardium, are the processes different? Certainly not. In the one case the exudation is converted into pus-cells and absorbed, and in the other into fibrous texture, causing adhesions. But because these processes have been hid from view, physicians have supposed that, instead of treating the inflamed parts as the surgeon does, he ought to attack the general symptoms which result from the lesion. In cases of fracture and contusion, there are also febrile symptoms, increased pulse, and so on. But does the surgeon imagine that callus will form better, or his abscess be resolved, or reach maturity sooner, by general bloodletting and antiphlogistics? Experience teaches him otherwise, and in the same manner it is certain that such treatment does not favor the natural termination of internal inflammations.

"It may be well, however, in further proof of this, to point out a little more particularly what are the changes which a pneumonia and a pericarditis do go through, as illustrative of the proposition we seek to establish.

"In pneumonia the exudation is infiltrated into the air-vesicles and minute bronchi, and between the fibres, bloodvessels, and nerves of the parenchyma, imprisoning the whole in a soft mass, which coagulates and renders the spongy texture of the lung more dense and heavy, or what is called hepatized. This accomplished, no air can enter, the circulation in the part is arrested and the nerves compressed, and the object of nature is now to reconvert the solid exudation once again into a fluid, whereby it can be partly evacuated from the bronchi, but principally reabsorbed into the blood, and excreted from the economy. This is accomplished by cell-growth. In the amorphous coagulated exudation, granules are formed, around groups of these cell-walls are produced, and gradually the solid amorphous mass is converted into a fluid crowded with cells. This is pus. The cells, after passing through their natural life, die and break down, whereby the exudation is again reduced to a condition susceptible of absorption through the vascular walls, and once again mingles with the blood, but in an altered chemical condition. In the blood, the changed exudation (now called fibrin) undergoes further chemical metamorphoses, whereby, according to Liebig, it is converted, by means of oxygen, into urate of ammonia, choleic acid, sulphur, phosphorus, and phosphate of lime. The urate of ammonia, by the further action of oxygen, is converted into urea and carbonic acid; the choleic acid into carbonic acid and carbonate of ammonia; the sulphur and phosphorus into sulphuric and phosphoric acids, which, combining with

an alkali or earth, form sulphates and phosphates. If it should happen that the quantity of oxygen taken is not sufficient completely to accomplish this cycle of changes, then, instead of urea, either urate of ammonia appears in the urine, or if the ammonia have entered into any other combinations, pure crystals of uric acid or fibrin. In consequence of these or similar changes, the exudation is finally removed from the economy.

"In a pleurisy or a pericarditis, the transformations occurring in the exudation are different. Let us follow them in the case of pericarditis, as we have carefully described them in pleuritis in another place. When a severe inflammation of the pericardium occurs, the liquor sanguinis is exuded in considerable quantity, separating the serous layers to a greater or less extent. After a time the fibrin coagulates and forms a layer which attaches itself to the membrane, whilst the serum of the blood accumulates in the centre. The coagulated fibrin at first assumes the form of molecular fibres, plastic or pyoid cells are formed in it; others throw out prolongations, so as by their union to form a plexus, which, communicating with the vessels below the serous membrane, renders the exudation vascular. Gradually the surface assumes the appearance of a villous membrane, as well as the absorbent functions of one. The enlarged villi frequently contain vacuoles or spaces, reminding me strongly of the placental tufts, than which nothing can be imagined more perfectly adapted for the purposes of absorption. In consequence, the serum now disappears, the two false membranes are brought into contact, and thus absorption, as soon as it is no longer required, is put an end to, and adhesion occurs. The matters absorbed into the blood pass through the same series of changes as those in pneumonia do, and are eliminated from the economy in a similar manner. Such is the natural progress of pericarditis.

"The two kinds of processes now described exhibit the same wise design in pathological as we everywhere find in physiological actions. In the vascular tissue of the lung, new bloodvessels are unnecessary. But in the non-vascular serous membrane, they must be formed to bring about removal of the morbid products. In the one case the entire exudation is transformed into cells, to produce rapid disintegration and absorption, which latter is easily accomplished by the already formed numerous vessels of the lung. In the other case, the exuded liquor sanguinis is separated into solid and fluid parts, and as there are no vessels in the serous membrane, they are formed in one portion of the exudation to cause absorption of the other.

"During the progress of these essentially vital acts and modes of growth and formation, how can it be supposed that lowering the strength by bloodletting can influence them in any way except for the worse; that is to say, weakening that power on which the transformations depend?"

In the last place, Dr. Bennett attempts to show that all positive knowledge of the experience of the past, as well as the more exact observations of the present day, alike establish the soundness of his position. The history of pneumonia is appealed to, and the answer appears to be very conclusive. At any rate, Dr. Alison allows it to pass unchallenged. Appealing to this history, then, it would appear that the result of a vigorous antiphlogistic treatment of pneumonia, as formerly practised in the Edinburgh Infirmary, in the Hôpital la Charité, at Paris, and elsewhere, is a mortality of 1 in 3 cases; that the result of a treatment by tartar emetic in large doses, as practised by Rasori, and more recently by Diel, is a mortality of 1 in 5 cases, or, according to Laennec, of 1 in 10; that the result of moderate bleedings, as in the treatment of Grisolle, is a mortality of 1 in 6½ cases; and that the result of a dietetic treatment, with occasional bleedings and emetics in severe cases, as with Skoda, is a mortality of 1 in 7, and if pure, as under Diel, a mortality of 1 in 13. These are data derived from the experience of large public hospitals. Dr. Bennett also shows that the mortality from pneumonia in the army and navy, where the malady has arisen for the most part in healthy able-bodied men, is also 1 in 13. And, lastly, Dr. Bennett shows that the result of his own practice at the Edinburgh Royal Infirmary, during the last eight years, has been to reduce the mortality still further, namely to 1 in 21½ cases, or to ¼ only of the numbers of twenty years ago. In this practice no attempt is made to cut the disease short, or to weaken the pulse and vital powers; but, on the contrary, the aim is to further the necessary changes which the exudation *must* undergo in order to be fully excreted from the economy.

To this end salines are given in small doses, during the period of febrile excitement, with a view of diminishing the viscosity of the blood. As soon as the pulse becomes soft, good beef-tea and nutriment are ordered; and if there be weakness, from four to six ounces of wine daily. As the period of crisis approaches the excretion of urates is favored by giving, three times a day, a diuretic, consisting generally of half a drachm of nitric ether, sometimes combined with ten minims of colchicum wine; but if the crisis occurs by sweat or stool, no care is taken to check it in any way.

The question, no doubt, is one of considerable difficulty, and much remains to be proved before it can be finally disposed of, but at the same time we do not hesitate to say that our sympathies, both in pathology and practice, are with Dr. Bennett rather than with Dr. Alison. At any rate, we cannot allow that Dr. Alison has advanced sufficient evidence to show—and this is the great point of his argument—that bleeding and other severe antiphlogistic measures have ceased to be necessary because inflammation itself has become more asthenic than it was formerly.

On the cause of prolonged Expiratory Murmur, and its value as a symptom in the early diagnosis of Phthisis. By Dr. C. W. BELL, of Buxton, Derbyshire. ('Assoc. Med. Journ.,' November 29th, 1856.)

We would direct the attention of our readers to the accompanying remarks, for, if we mistake not, they enable us to understand the cause of that physical sign which is so constantly present in the early history of phthisis—namely, the prolonged expiratory murmur.

"Many years ago," writes Dr. Bell, "when assisting at the vivisection of a stunned rabbit, in which the trachea and larger bronchi were fully exposed, I was surprised to observe their muscular fibres contract, diminishing the diameter of the tubes, at each movement of inspiration. It is not the general belief that the tubes are contracted during inspiration, and expanded in expiration; but if we consider the anatomical structure of the lungs and the physical effects which the whole apparatus of respiration is intended to produce, it will be obvious that had the bronchial tubes been made to contract during expiration, and expand during inspiration, as they are generally imagined to do, this would have defeated the object of bestowing on them any contractility or power of elastic expansion.

"The intention to be fulfilled by expansion of the chest through raising the ribs and depressing the diaphragm, is to cause the air to rush into the cells of the lungs; now, if the tubes all expanded at the same time as the thorax, say, for the sake of argument, to the same extent to which the capacity of the chest had been increased by its expansion, it is obvious that no air whatever would penetrate into the cells, as all that was drawn into the chest would be required to fill the tubes. Or, if the parietes expanded much, and the tubes comparatively little, the real vacuum in the air-cells would be only the difference between the increased capacity of the chest, and the increased space occupied within it by the expanded tubes. But, on the other hand, if instead of expanding, the tubes contract at the moment the chest expands, thus occupying a less space in its interior just when its capacity is greatest, it is obvious that a much increased vacuum will be formed, and that it will take place in the air-cells, where alone it is required; and thus, whatever air enters the chest goes directly to its destination, instead of lingering in the tubes.

"Taking this view, the operation of expiration as well as of inspiration, will be more intelligible, for it will be seen that if the tubes expand at the same moment that the chest contracts, the air-cells will be submitted to direct pressure between the expanding tubes and the contracting thoracic parietes: and while the air that has ceased to be serviceable to the animal economy is thus more effectually expelled from them, the way is at the same time more widely opened for its exit.

"It will be seen from the above, that inspiration is principally due to *muscular action* in the thoracic muscles, the diaphragm, and the circular fibres of the bronchial tubes, whereas expiration depends more on cartilaginous *elasticity*, bringing down the ribs and expanding the tubes.

"If additional argument be wanting for the belief that the lungs must in themselves possess considerable power of inspiration and expiration, while within the *unopened chest*, independent of the expansion and contraction of the thoracic pari-

etes, we would point to the apparently very small amount of abdominal respiration in a case of fractured rib, bandaged *secundum artem*, and to certain states of syncope, &c., that will suggest themselves to each of us, in which respiration is maintained without any apparent thoracic or diaphragmatic motion.

"It appears, then, that contraction and expansion of the bronchial tubes is the only satisfactory mode of accounting for the well-established fact, that the sound made by the inhaled breath rushing through the tubes towards the air-cells is considerably more protracted than that made by the same air returning in expiration; for there does not appear sufficient difference in the forces exerted in drawing in and expelling the breath, to account for the difference of time occupied in its entrance and its exit, if the calibre of the tube remained the same.

"No sooner, however, do we admit that the air-tubes contract during inspiration, and expand during expiration, than the full value of a slight prolongation of the expiratory murmur becomes apparent as a consequence, and therefore as a certain symptom, of the deposit of tubercle in the parenchyma of the lung; for what change should we *a priori* infer to have taken place in the condition of the bronchi, if we found the expiratory murmur becoming as long, or nearly so, as that of inspiration, but that something had occurred to impede their elastic expansion, and that the tubes remained nearly of the same calibre in expiration as during inspiration? Now, the part in which the earliest deposit of tubercle is found in the structure of the lung is known to be the cellular tissue immediately surrounding the minute bronchi; and the natural effect of this would be to impair their elastic expansibility, and cause the difference of calibre of the tube in its utmost degree of contraction and expansion to be less than in health, and consequently the duration of the murmur of expiration to approach that of inspiration. I do not know that it is ever so protracted as to equal the latter sound; nor should we expect that the deposit of tubercle, although plainly calculated to interfere with the elasticity of the bronchi, should do away with the contractile power of their muscular fibres.

"What gives peculiar value to prolonged expiratory murmur as a reliable symptom of phthisis is, that, so far as I know, there is no other condition of the lung capable of producing it; cancer of the lung is the only disease that appears to me likely to do so, but whether it does or not, I have had no opportunity lately of ascertaining.

"The importance of possessing any symptom on which we can implicitly rely, independently of concomitant evidence, cannot be too highly appreciated in this disease, because it enables us to begin and follow up earnestly a course of treatment at a stage of the malady so early as almost to insure success; and a firm conviction that this symptom is truly diagnostic has this farther advantage, that, by the concentration of our attention upon it the ear soon becomes educated to a much finer discrimination of the presence or non-existence of tubercle than at first could have been thought possible, and in some cases a diagnosis may be made from this alone with a degree of certainty, that a stethoscopist without faith in it could hardly venture to found on the aggregate of all the other evidence derivable from auscultation and percussion.

"But it is not only in their bearing on the early discovery of tubercle in the lungs that the above considerations will be found interesting; for there are nervous affections of respiration, in which it is important to consider the action of the bronchial tubes, such, for example, as the anomalous sounds heard in some curious forms of hysterical spasm of the chest and throat, but more especially in spasmodic asthma, in which it is often most painful to the ear to listen to the effects of continued muscular contraction of the tubes during expiration."

On the pathology, symptoms, and treatment of Ulcer of the Stomach, with an Appendix of Cases. By W. BRINTON, M.D., F.R.C.P., Physician to the Royal Free Hospital. (Post 8vo, Churchill, 1857, pp. 227.)

This work (which is a reprint, with some alterations and additions, of various papers on ulcer of the stomach, which had appeared in various periodicals during the last few months) may be described as collecting and incorporating facts hitherto scattered and little accessible, and as recording the existing state of our knowledge respecting a very common disease, for, as Dr. Brinton shows, open and unhealed

ulcer of the stomach may be found in 2½ per cent. of persons dying from all causes, and the scar of such ulcer may be found in 2½ per cent. Ulcer of the stomach, indeed, is a much more common disease than many are disposed to think, and hence it may be well to devote our space to repeating what Dr. Brinton has to say upon two questions, merely adding that the rest of the work attests equally to the patient and expert inquirer, and to the sound practitioner.

In reply to the question, *what is the minimum of evidence that will justify our affirming the existence of an ulcer of the stomach during life?* Dr. Brinton says:

"A specific answer to this question it is impossible to give. But I am inclined to think that nothing less than all the chief symptoms enumerated entitle us to pronounce a decided opinion. In other words, unless the pain possess the characters attributed to it,* unless this pain be accompanied by vomiting, and unless there be evidence of hemorrhage having occurred in the course of the malady, there is no sufficient basis for a definite diagnosis of the existence of a gastric ulcer. The date, duration, and frequency of the pain chiefly indicate some morbid condition of the mucous membrane of the stomach. The vomiting adds, that this disease implies great irritation of the nervous centres connected with the organ. And it is reserved for the hemorrhage to show that the disease is such as to involve an absolute breach of continuity in the structure of the stomach.

"But I have not the slightest doubt that an absolute enforcement of this rule of diagnosis would lead us to overlook a vast number of cases; and might thus be the occasion of grievous errors in practice. In point of fact, beyond the limits of secure diagnosis, there are a large number of cases in which we may justifiably entertain strong suspicions that the symptoms are due to this lesion."

* The character of the pain is peculiar. Rarely or never does the sufferer describe it as lancinating, stabbing, or stitching. In the earliest stage of the disease, it is little more than a feeling of weight, sometimes a tightness, giving the patient an impression as though the food experienced a stoppage in his epigastric region. Retaining these dull and continuous characters, it then gradually becomes intensified into a burning sensation, and at last into a gnawing pain, that produces a kind of sickening depression, which is quite distinct from the nausea often associated with it. The date of its access is also characteristic. In a vast majority of cases it comes on from two to ten minutes after the ingestion of food, and remains during the one or two hours which correspond to the period of gastric digestion, at the close of which act it gradually subsides and disappears. And, when, as is often the case, it is accompanied by vomiting, it almost invariably ceases as soon as this act has emptied the stomach of its contents. In some instances, however, the pain follows deglutition immediately, instead of being preceded by the usual interval of a few minutes. In some instances the pain imitates that of an ordinary form of dyspepsia, in only coming on half an hour, an hour, or more, after eating. Lastly, in what are generally either large lesions or protracted cases—often both—the pain loses the above character, becoming continuous during the intervals of the meals, and lasting days or even weeks without any intermission; or it even occurs chiefly on an empty stomach, and is alleviated by the ingestion of food. The situation of the pain forms another of its characteristics. The place of its earliest appearance and greatest intensity, and to which it often remains strictly limited, corresponds to the centre of the epigastrium, or to the median line of the belly immediately below the free extremity of the ensiform cartilage. The portion of the epigastric region to which the pain is referred, forms a circular area of rarely more than two inches diameter, sometimes, indeed, a mere spot of less than half this size. The dorsal pain, first described by Cruveilhier, constitutes almost as important a symptom of the gastric ulcer. As far as my experience goes, it generally comes on a few weeks or months later than the epigastric pain, and from this time forth is quite as constant and characteristic, if not as distressing. It is almost always felt as a gnawing pain, which, ranging in its vertical position from the spine of the eighth or ninth dorsal to that of the first or second lumbar vertebra, is usually "interscapular" as well as "rachidian." Like the epigastric pain, it has a fixed seat, generally remaining at or near the spot of its first appearance during the whole progress of the disease. Like it, also, there are lateral as well as vertical deviations from its ordinary situation. But I do not think I have ever seen these remove it to a greater distance than one or two inches from the median line, indeed, scarcely ever more than a single inch. Its worst attacks generally alternate—rarely coincide—with those of the epigastric pain. Whether the pain of a gastric ulcer is always increased by pressure, it seems impossible to decide. There is only one necropsy on record—and this probably not of a true or spontaneous ulcer—in which it is distinctly specified that pressure was altogether devoid of such an effect. The effect of posture on the pain in different cases is more variable. As a rule, a severe paroxysm is relieved by the recumbent posture, no matter what may be the situation of the ulcer in the stomach. But the varieties of the recumbent posture—or, to speak technically, the *decubitus*—will often have no influence whatever in increasing or diminishing the pain. The effect of movement upon the pain closely corresponds to that of posture. As a rule, all violent bodily exertion is likely to be followed by an attack. While even the moderate exertion implied in walking, sustained so as to produce fatigue, generally brings about the same effect. And there can be little doubt that the relief generally afforded by the recumbent attitude is in great part due to the perfect rest it implies. The pain is also affected in a special manner by various kinds of food. As already mentioned, its worst access or paroxysm generally has a close (though not exact) correspondence with that period of gastric digestion during which the organ is most distended with food. It is increased by the ingestion of hard or indigestible substances; and is mitigated by a pulpy milk diet. There are also many articles of food which have an irritating effect quite independently of their consistence. Amongst liquids few are more generally unbearable than ordinary tea and beer. Finally, all hot substances are usually productive of great pain. Lastly, in the young female subject of gastric ulcer, the pain often appears to be affected by the access of menstruation.

"In saying this, I am desirous to be understood as speaking chiefly of my own clinical researches. But though I dare not lay much stress on the negative evidence derivable from the symptoms recorded in many hundreds of cases of perforation or hemorrhage scattered through various journals,—for in a large number of these there may not have been such repeated and minute investigations of the symptoms during the life of the patient as to justify us in denying the presence of all indications of disease save those mentioned,—still it is probable that some of them afford strictly accurate records of all the dyspeptic ailments that have preceded the fatal attack. And hence it is very possible that the numerous cases in which more or fewer of the above symptoms are not recorded, include instances in which they were really absent.

"But much more trustworthy evidence of such irregularities in that train of symptoms which characterizes gastric ulcer, is constantly being brought under my notice in hospital practice. As might be expected, a moderate hemorrhage readily escapes the notice of both the patient and his medical attendant. And even where the former habitually inspects the stools, or the physician calls in the aid of the microscope to an examination of any suspicious egesta, the irregularity of its occurrence may baffle all attempts to verify it for months together. In like manner, the vomiting seems to be sometimes (though much less frequently) absent from the history of the malady, during a great part of its course, or merges into a trifling regurgitation after meals, such as we hardly dare consider its representative.

"Indeed, a careful consideration of the details already brought forward affords a tolerably complete explanation of many of the most anomalous cases of ulcer of the stomach at present on record. It is true, that we are not entitled to assign any exact limit to the degree in which obscurity or absence of the preceding symptoms may render latent the lesion they usually announce. But their slow succession in a majority of cases might alone prepare us for their absence in a minority. The delay of this or that particular symptom may not only deprive us of the (multiplied and not merely added) probability it contributes to our diagnosis, but may merge two or more stages of the malady into one, or may even reverse their order of sequence. The lesion itself may be fatal at any period of its progress; and if thus fatal, it is obvious that the casual delay of any symptom—perhaps for a period not greatly exceeding that of the interval which generally precedes its being added to the previous symptoms—would be scarcely tantamount to its specific absence, even though it might, as a matter of mere narrative, never have occurred.

"It is in obscure and uncertain cases of this kind that it is most important for us to be thoroughly acquainted with the whole characters of the disease, as shown in its more chronic and typical forms. The pathology of the lesion in general must supply any casual deficiencies in the physiognomy (so to speak) of the particular instance. Above all, we must remember that it is our first duty to be useful; and that suspicions which fall far short of a definite diagnosis, may yet be sufficiently important to dictate the whole plan of treatment. Suppose, for example, that we are consulted by a patient for protracted or severe dyspepsia, which has seriously affected the general health, and is associated with pain and tenderness in the epigastrium, and pain in the interscapular region, increased or provoked immediately after the ingestion of food. If, on further inquiry, it turns out that this pain is especially called forth by proteinous substances, or by hot liquids, and that it is affected as above described, by movement, rest, and posture, there can be little objection to our keeping steadily before us the possibility of a gastric ulcer. Such a suspicion, it is true, guides us to a specific course of treatment; but that treatment involves neither pain nor danger of any kind, and scarcely more severity of diet than many a dyspeptic sufferer would gladly submit to in order to secure the removal of his distressing symptoms. If unfounded, it does no harm; but if well founded, it effects incalculable good. Indeed, it is hardly too much to say that, by treating such cases as ulcer of the stomach, we may often cure what we cannot diagnose; and may thus far witness a triumph of the Art over the Science of Medicine—if one may venture on such a paradox—which the most laborious pathologist would scarcely be sorry to see more frequent than modern research generally allows it to be.

"These remarks will especially apply to such symptoms when they occur in connection with amenorrhœa in young females who have lately attained the epoch of puberty. Here the absence of hemorrhage, and the little attention such persons

habitually give to mere dyspeptic symptoms, often conspire to obscure the diagnosis; even while a careful inquiry into the history of the malady, and a sedulous examination of the epigastric region, together afford us only too much reason to suppose that the patient is in imminent danger of death by perforation of the stomach."

In reply to the second question—*with what diseases is gastric ulcer most likely to be confounded?*—he says, "this question could only be fully answered by details of cases such as I cannot here adduce. Dyspepsia, chronic inflammation, 'hyper-trophy' and cancer of the stomach, disease of the duodenum, gall-stones, abdominal aneurisms, enteric tuberculosis, and a variety of other diseases too numerous to mention, may all present degrees of resemblance to gastric ulcer, which the variable symptoms of this lesion render much more suggestive of error than is the case in the maladies of many other organs."

"The above observations render it unnecessary to dilate upon the means by which we should generally distinguish between dyspepsia and gastric ulcer. In a great majority of cases, there is little difficulty in deciding which of the two maladies is present. But in some cases the distinction is by no means easy. And there are good reasons for conjecturing that of all the Protean forms which dyspepsia may assume, that called the morbid sensibility of the stomach is the one which is most likely to include cases of ulcer; or, in other words, if really independent of this lesion, is most likely to be mistaken for it."

"Of all the other diseases just enumerated, there is none in which the resemblance to ulcer is so close, and a definite opinion respecting the latter disease so important, as in the case of cancer of the stomach. Hence we may enumerate (though we cannot fully discuss) the chief considerations on which their differential diagnosis would generally depend. The cancerous disease especially affects the epochs of middle and advancing life. Its symptoms rarely date from more than twelve or eighteen months prior to the death of the patient. It is associated with the cancerous cachexia; often with cancerous disease of other organs. In many cases it forms a hard but moveable tumor in the epigastrium. Its pain generally has a more lancinating character, and a time of appearance that belongs rather to the later stage of gastric digestion than to the few minutes that succeed deglutition. Its hemorrhage is more scanty; and, on the whole, later in the history of the malady. Its vomiting is also generally late; rarely of many months' continuance; and expels what the microscope will often show to be cancerous cells. But unless unusually distinct, scarcely one of these characters possesses much independent value. The gastric ulcer is frequent in middle and advancing life. It may destroy life in a few days or weeks. It is often associated with cachexia; which, again, is sometimes quite undistinguishable from that of cancer. It is not unfrequently accompanied by pulmonary disease, such as can tolerably simulate secondary cancer of the lungs. The lymph by which an ulcer adheres to the liver or to other viscera may give rise to a tumor which can be felt through the wall of the belly. Its pain may affect a lancinating character, and be deferred until some time after meals. Its hemorrhage may have the moderate amount, and the 'coffee grounds' appearance, ordinarily seen in that of cancer. And unlikely as it may seem that many of these separate and infrequent contingencies should combine to obscure the diagnosis of any single case, such instances do really occur. Once or twice I have myself met with cases of this kind, in which there was nothing to justify any definite diagnosis between the two diseases, and in which the moderate ulceration detected months before death has offered no symptoms during the whole time which could warrant its being definitely diagnosed as malignant or the reverse."

Clinical Lectures on certain Diseases of the Urinary Organs, and on Dropsies. By R. B. TODD, M.D., F.R.S., Physician to King's College Hospital. (12mo., Churchill, 1857, pp. 435.)

These lectures, like Dr. Todd's former lectures, inculcate many cardinal points in the diagnosis, treatment, and pathology of hæmaturia, fatty and waxy disease of the kidney, dropsy after scarlet fever, acute renal dropsy, cardiac dropsy, ascites, gouty kidney, gouty inflammation of the bladder, and gout, and they are preceded

by some excellent remarks upon the importance of clinical study and the best mode of conducting it. Lectures of this kind are especially interesting and very useful to those who hear them; but they are for the most part too desultory for those who have not had this advantage. At the same time it is not possible to read the lectures of a really good man, like Dr. Todd, without acquiring many new ideas. We will take, for an example, what is said upon the *gouty kidney*.

Dr. Todd thinks that a knowledge of the real nature of gout, and of its kindred malady, rheumatism, is at the very foundation of all sound pathology, and he then gives a case of what he calls the "gouty kidney" in exemplification. The case is this:

CASE.—Eliza R——, æt. 40, admitted June 5th, 1846; married, and has had two children, the last being now fifteen years of age. Latterly she had led a very irregular and intemperate life, as a prostitute. She stated that she never enjoyed good health, and had especially suffered from repeated attacks of rheumatic gout, affecting all her joints, large and small. These were, no doubt, increased in frequency and severity by her habits of intemperance.

Three months before admission she had her last attack of rheumatic gout. Shortly after this she observed her legs beginning to swell, as well as her abdomen. The swellings having increased considerably, she sought and obtained admission into the hospital.

Her appearance was strikingly indicative of that extreme disturbance of the general health and constitution which is always produced by the long continuance of gout in the system. There was an unhealthy sallow hue, with an anxious expression of countenance. Her eyelids were swollen, as also her cheeks: the facial dropsy, although sufficiently distinct, was not excessive. Her feet and legs were also œdematous, and pitted distinctly on pressure.

There was considerable swelling of both knee-joints, caused evidently by an effusion of fluid which distended their capsules. The patient complained very much of pain in both these joints, especially the right, which was the most swollen.

Most of the small joints, particularly those of the fingers and toes, were swollen from old attacks of gout, the swelling apparently being due to a thickening of the fibrous tissue;—some of them grated on moving the surfaces upon each other, indicating the absorption of their cartilages, and the probable deposition of lithate of soda in their place.

You will remember that I stated more than once, at the patient's bedside, that I thought it very likely that a similar change—namely, absorption of the articular cartilages and deposition of lithate of soda, had taken place in the knee-joints: and that the articular surfaces of the femur, tibia, and patella on each side would be found thus affected.

The abdomen was not enlarged, nor dropsical. There was no evidence of enlargement of the liver. On the contrary, everything favored the opinion that this organ was in some degree contracted: the intemperate habits of the patient, the sallow hue of her skin, a slight dilatation of the abdominal veins, and the absence of dulness on percussion over the right hypochondriac region, served to excite suspicion as to the existence of a degree of cirrhosis of the liver, and justified our expecting abdominal dropsy if it proceeded further.

The heart was likewise evidently affected. We had proof of this in the augmented impulse of the organ, and the increase of dulness in the cardiac region: and on placing the stethoscope over the heart's apex, a loud bellows-sound was heard synchronous with the systole of the ventricle. To the right of the heart's apex, and along the aorta, this sound became less distinct, and vanished altogether as the stethoscope was passed up the aorta. It was, however, very audible beneath the angle of the left scapula. The pulse was small and weak, and its frequency 100. These signs indicated some hypertrophy and dilatation of the left ventricle, with imperfection of the mitral valves.

The urine was not materially altered in quantity, being sometimes below, sometimes above the normal amount: its specific gravity was 1012; it was clear and pale. By heat and nitric acid it yielded a slight precipitate of albumen.

* * * * *

The treatment adopted in Eliza ——'s case immediately after her admission,

consisted in the application of a blister to the right knee, which was most swollen, mild purgatives, and a bitter tonic (*Inf. Quassiae*), with ammonia.

On the 19th of June it was reported that she had improved considerably; the swelling had been much reduced, the urine was natural in quantity, slightly acid, specific gravity 1010, without sediment, and it contained a small quantity of albumen.

On the 20th of June there was a sudden decrease in the quantity of the urine, and on that day she was seized with a fit of epileptic character, inducing loss of consciousness and convulsions: the fit lasted some minutes, and on coming out of it she continued in a stupid drowsy state for some time. The small quantity of urine passed was not kept for examination. A mustard poultice was applied to the back of her neck, and this was succeeded by a blister.

On the 21st, at 2 o'clock in the afternoon, she had another fit, more severe than the last. In it she was much convulsed, and bit her tongue severely. The fit lasted a quarter of an hour, during which she was so unconscious that on her recovery she was not aware that she had had a fit. Her water and motions were passed involuntarily.

On the 22d, it was reported that she had had two severe fits since the preceding day. She complained of occasional severe lancinating pains in the abdomen. There was some dyspnoea. Respirations 20; pulse 112. She has been very delirious. Micturition very defective. On the following day she died.

This is a common mode of termination for those diseases of the kidneys which either by encroaching on the proper structure of these organs, or by any other means, materially diminish their secreting power; and the most probable explanation of this phenomenon is furnished by the fact, that as the proper constituents of the urine are not duly eliminated, they accumulate in the blood, and disturb the brain, giving rise to epilepsy, delirium, and coma.

The post-mortem examination presented many points of extreme interest.

The heart was somewhat increased in size, from slight hypertrophy and dilatation of both ventricles. This morbid state of it was due to the imperfection of the mitral valve caused by deposits upon its margin, which prevented the perfect closure of the orifice. It was the regurgitation through this orifice, which remained open during systole, that occasioned the bellows-murmur heard with the first sound of the heart.

The liver was hardened and condensed in structure, and somewhat reduced in size. Its secreting lobules were not materially altered, but the capsule of Glisson, on the external surface of the gland, as well as the prolongation of it into the larger portal canals, was much denser and thicker than natural. This tissue seemed to have been the seat of a morbid process, which probably was produced partly by the intemperate habits of the patient, but partly likewise by the share which the liver had in the elimination of the morbid poison of gout.

The most interesting morbid changes, however, were found in the kidneys and in the joints.

The kidneys were very much contracted in size; they retained hardly, indeed, so much as one-third of their natural dimensions. They had upon their surface a shrivelled granular appearance. The capsule appeared denser and whiter than natural, and separated with great facility from the surface of the gland. On cutting into the kidney it appeared that the decrease in its size was at the expense chiefly of the cortical substance, two-thirds of which must have disappeared. The cut surface presented much the same granular appearance as the external surface of the gland.

Upon examining portions of these kidneys under the microscope, I found several tubes much dilated, and furnished very scantily with epithelium; others were completely empty; and others, again, collapsed and folded into fine plaits, which gave them the appearance of fascicles of fibrous tissue. A transverse section served to display very well the dilated tubes, showing likewise how small was the quantity of contained epithelium, and how little interlobular tissue there was likewise. Here and there a tube contained at one point, at the bend of a convolution, a few epithelial cells filled with fat; these were, however, few in number, and in many parts the tubes appeared healthy. Those in the pyramids were for the most part healthy.

These appearances are distinctly indicative of a wasting or atrophy of the gland. Many of the bloodvessels are obliterated; the portions of the gland which these supply waste; the epithelium in them is formed scantily, or not at all; the tubes collapse, and are folded into plaits, giving the appearance of newly-developed fibrous tissue.

Dr. Todd then proceeds to say that he would give the name of "gouty kidney" to this state of kidney when it is associated, as it frequently is, with a decided gouty diathesis; after this, he adds:

"To what extent the changes which have taken place in it are due to inflammation, or how far simple inflammation, untainted by any morbid matter in the blood, is capable of producing similar alterations, I do not undertake at present to decide. Rayer has recognized the small and contracted kidney as the result of chronic inflammation, and it has been viewed in this country chiefly as the last stage of Bright's disease. This latter interpretation of it, I now feel convinced, must be erroneous.

"As to the diagnosis of this disease, we may gather the principal points which will assist us, from the history of this and the other case to which I have referred.

"The patient is evidently of gouty habit, as evinced by general signs and by his family history, by his habits of living, and by his having had, to a greater or less extent, attacks of gout in his limbs. There is more or less of dropsy, although this is by no means a necessary symptom, neither is the dropsy so general nor so great as in Bright's disease. The quantity of urine is not, in general, diminished, but, on the contrary, is either normal or increased; and it is pale, of low specific gravity, and deficient in the organic principles, whilst it contains albumen in *small quantity*. The sedimentary matters found in the urine are not, comparatively, in large quantity. Lithates are among the rarest in occurrence; indeed, when the disease is fairly established, I should say that lithates or free uric acid are not found in the sediment. Granular casts of uriniferous tubes, waxy casts of the same, generally of large size, altered epithelium, now and then fatty epithelium, and cells which are those of pus or allied thereto—these are the ingredients of that whitish, mucoid deposit which you will always find to collect at the bottom, when the urine secreted by this kind of diseased kidney is allowed to stand in a tall conical glass for a few hours. Now and then, when an acute attack of gout threatens, or has occurred, or bronchial irritation is present, you may have lithate sediments in great abundance; but in the advanced stages blood-corpuscles and pus-cells are apt to occur.

"Under these circumstances, the particles of pus, I apprehend, do not come from the kidneys, but from the mucous membrane of the infundibula and pelves of the kidneys, and the ureters, over which the acrid gouty urine flows."

II.

REPORT ON THE PROGRESS OF SURGERY.

Report of seven cases of Transfusion of Blood, with a description of the Instrument invented by the Author. By ALFRED HIGGINSON, Esq., Consulting-Surgeon to the Liverpool Dispensaries. ('The Liverpool Medico-Chirurgical Journal,' Jan., 1857.)

Judging from cases in which blood has been transfused during the last few years—now more than fifty in number—the effects of the operation have been such as to place its power and utility beyond question; but much yet remains to be known, and many prejudices have yet to be removed, and on this account we are glad to have any additional evidence on the subject. We are glad, also, to hear of a plan which seems to do away with some of the difficulties which belong to the operation itself.

Instead of using a syringe, Mr. Higginson receives the blood in a funnel, and allows the blood to flow through a tube into the vein. He has, indeed, contrived an instrument which is represented in the accompanying diagram.

The mode of using the instrument is described as follows:

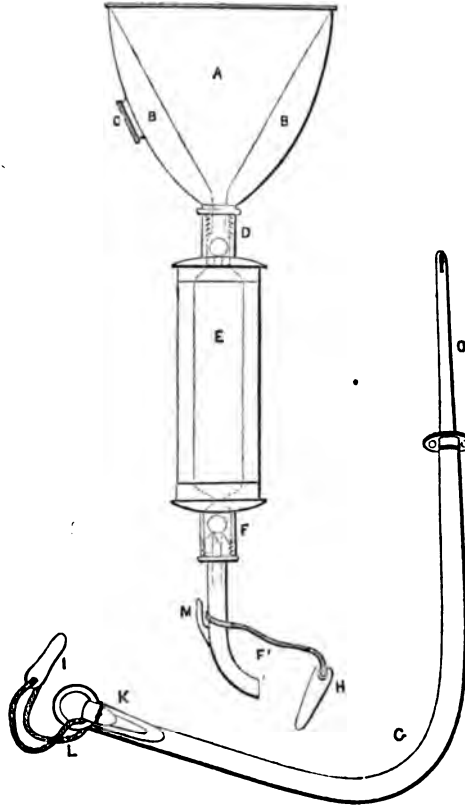
"To prepare for operating, take a washhand basin nearly full of hot water, not less than 100°, and immerse in it the instrument and tube. Take out the screw, C, and fill the cavity, B, with the water, then replace the screw. Fill the tube, G, with water through the opening at K, and insert plug, I. The tube may then be carefully handled without displacing the water, keeping it as horizontal as is practicable.

"Now find the best vein in the patient's fore-arm, let half an inch of it be fairly exposed, and pass a probe or needle under it at the lower end of the incision; then make a fair opening, and pass the metal pipe, O, an inch or more into the vessel, in the upward direction. It is the entire duty of an assistant to retain the pipe in the vein, and prevent all motion of the patient's arm. The vein from which the supply is to come may now be opened, the arm being brought conveniently over the cup, A, which is so held by the operator as to bring the openings, F and K, still closed by the plugs, into proximity. The right hand of the operator supports the instrument, holding it by the barrel, E, and by compressing it gently a few times, the air is expelled and the barrel filled with blood. The cup should be at least half full before joining the tubes, which must be quickly done in the following manner.

"Take the ring, L, between the thumb and fore-finger of the left hand, the middle finger supporting the tube, G, immediately underneath the opening, K. Let an assistant gently remove the plug, I. Bring the pipe, F, into a line with K, and let the plug, H, be withdrawn. While the blood immediately escapes from the orifice, insert the metallic tube, F, into the opening at K, and pass the ring on to a small stud, M. The adjustment is now complete, and transfusion begins.

"One assistant must confine his attention to the patient's arm, another to the supply, whilst the operator watches the blood in the cup, and grasps the elastic barrel or not, as may be required, to propel the blood onward, but never letting it sink so low in the cup as to draw air into the barrel. When the stream is well established, the instrument acts for a time by gravitation simply, requiring no assistance from the hand of the operator. In this case only an approximate estimate of the quantity of blood injected can be formed; whereas, in the other mode,

we know that six drachms are sent out at every complete grasp of the hand. Observation at the time must show when enough blood has been transfused; but the probability is that, unless done quickly and continuously, coagulation will bring the process to an end, without a choice on the operator's part. More than twenty



A is a metallic cup, of 6 oz. capacity, to receive the supply of blood. B an outer casing which will hold 5 oz. of hot water, introduced through an aperture at C. D is a passage leading into an elastic-barrel, E, composed of vulcanized India-rubber, of which the capacity is 1 oz. F, the exit for the blood into the injection-pipe, G. At D and F there are ball-valves, capable of closing the upper openings when thrown up against them, but leaving the lower openings free. The blood, or other fluid, poured into the cup, A, has free power to run unobstructed through D, E, F, and therefore a small plug, H, is provided for the purpose of closing the lower aperture, F, when necessary. The tube, G, is of vulcanized India-rubber, and terminates in a metal tube, O, for insertion into the vein.

ounces have been injected, in one case, by this instrument, without difficulty. The injection of air seems to be absolutely avoidable by its use, whereas with any ordinary piston-syringe this is not the case, for the air may pass by the side of the packing. To clean the instrument all the parts are to be unscrewed, and care should be taken that the ball-valves are not washed away with the coagula.

"If on any account it should be wished to stop the influx of blood for a few moments at a time, during the operation, it is best done by pressing the pipe, C, between the finger and thumb. The recommendation to pass a probe beneath the vein is not lightly given, for I have found it of very great service."

In five out of seven cases recorded below, transfusion may fairly be said to have been of use. The cases are these:

CASE 1.—*Extreme prostration, from protracted suckling of twins.*—Mrs. C—, æt. 33, when in her fourth pregnancy, suffered severely during the last three months from ascites and anasarca. She was confined of twins, July 7th, 1847. Both lived, and she suckled them successfully, notwithstanding her previously enfeebled condition. At the commencement of 1848, however, she was ordered to wean them, but could by no means be prevailed on to do so. In March, it was evident that she had exhausted herself greatly by over-suckling, and a chronic diarrhœa had set in. On the 12th of March, she rejected everything taken into the stomach, and fainted when raised from her pillow, though quite conscious and free from suffering when in the horizontal position. The medical friend who saw her with me, had no further remedies to suggest than those I had previously tried without avail. When I proposed transfusion, he said, "Any one else would let her die; but if you determine upon transfusion, make your arrangements, and I shall willingly help you." A few hours later found her unimproved, and two medical friends assisted me to operate, our decided conviction being that unless we did so she would die during the night. The supply of blood was given by a healthy female servant. It was estimated that twelve ounces were injected, and a state of quietude succeeded to the somewhat restless condition preceding the operation. The pulse was improved, and she seemed sleeping. But in a few minutes the patient was seized with a rather severe rigor. It did not last long, but led to a state of reaction and excitement, in which she sang a hymn in a loud voice. Afterwards she had some refreshing sleep, and during the night took nourishment. She improved steadily, and went into the country ten days afterwards. On her return, though still pallid, she expressed herself as better than she had been for years. She died three years afterwards of phthisis of six months' duration. This patient told me after the operation that she had felt in a marked degree the reviving influence of the new blood. She fell into a pleasant dream, and was not aware of the occurrence of the rigor, nor of her vocal exertions.

CASE 2.—*Hemorrhage after birth of child, on expulsion of placenta.*—December 7, 1850, Mrs. —, the private patient of a medical friend, who called me in to transfuse, had had several previous good confinements. On this occasion the child was born without anything worthy of remark, except that the funis was extremely short. Internal hemorrhage took place before the placenta could be removed, and the one large gush which then occurred so completely prostrated the patient, that in consultation with another surgeon, transfusion was decided upon, and no time lost. The lady's sister supplied the blood, and between ten and twelve ounces were easily injected. The benefit was immediate and striking, and no bad symptoms retarded her recovery.

CASE 3.—*Hemorrhage from placenta prævia; fœtus retained.*—Feb. 7, 1851, Mrs. —, mother of a large family. Placenta prævia had led to sudden and exhausting hemorrhage. Two attending practitioners had decided on transfusion, and I was sent for. The placenta had been removed—the child's head occupied the os uteri, and hemorrhage was over. The patient, however, was much sunk, and did not rally by stimulants; the skin was of a livid hue, as in the asphyxiated stage of cholera, and appearances were very unfavorable. A female servant gave the blood, and six or eight ounces were easily injected, when a sudden jactitation of the patient jerked her arm from my assistant's grasp, and drew the pipe out of the vein. Before re-adjustment could be effected, coagulation in the instrument took place, and as no amendment was observed the operation was abandoned. She died within half an hour, undelivered.

CASE 4.—*Hemorrhage from adherent placenta; uterus empty, hemorrhage ceased.*—September 12, 1851, Elizabeth Eburn, æt. 37, was delivered of her sixth child, at the Lying-in Hospital, of this town. An adherent placenta, which had given rise to much hemorrhage, had already been removed, when I was requested to transfuse the patient. No more blood was lost. A servant supplied the blood for the operation, and twelve ounces were injected. The patient lived seven days, but gradually sank. Post-mortem inspection showed the uterus to be internally purulent and offensive. The internal organs were all anæmic, but free from disease. There was no disease of the veins, either in the uterine region or in the arm where the puncture had been made.

CASE 5.—*Partial placenta prævia; hemorrhage before delivery.*—The case was

one of placenta prævia, in which partial separation had taken place, and there had been great hemorrhage: the woman appeared sinking, but neither fœtus nor placenta was yet expelled; hemorrhage, however, had ceased. The case occurred in one of the worst localities in the town, and two neighboring women, who were willing to supply blood, had each a vein opened. The blood, however, was dark and sluggish in both instances, and produced scarcely any effect, not more than five or six ounces having entered the patient's body. In consequence of its unfit condition, warm water with a little common salt was then injected to about twelve ounces, slightly improving the circulation. Delivery was then speedily effected, but life was extinct before this was fully accomplished.

CASE 6.—*Mania; refusal to take food; exhaustion; approaching collapse.*—On November 10, 1856, I was requested to transfuse a patient in the work-house hospital. T. C—, aged 21, a girl of loose character, had attempted self-destruction, and was admitted in a state of violence requiring restraint. She had a copious and offensive expectoration. The only period of consciousness was a very short one following the administration of a showerbath. For nearly a fortnight she refused food, and her jaws were firmly closed. Notwithstanding efforts to nourish her, by enemata and the stomach-pump, she became more and more feeble. When I saw her, the pulse had disappeared from the radial arteries, and almost from the temporal. In the brachial it was feeble,—130. Respirations twenty-six per minute. Surface and extremities wanting in heat, but the thermometer in the axilla stood at 94°. Eyes very much sunk, upturned, lids closed, and with a peculiar dark marginal ring. No sign of consciousness, but a constant painful and shrunk expression of face. Transfusion being determined upon, a good supply, of rather dark blood, was obtained from a female, and the injection commenced. Pulsation returned at times in the radial arteries, and then again became indistinct, but the breathing improved, and the expression of countenance was much better. Twenty ounces, or more, were injected. A little wine and water was swallowed during the night, and the following day she put out her tongue when told to do so, and appeared better. The offensive expectoration continued, and there seemed a difficulty in swallowing. Symptoms of sinking again came on during the second night, and she died about forty hours after the transfusion.

An examination of the body on the following day, showed effusion of serum on the surface of the brain, to the extent of several ounces, a degree of opacity of the arachnoid membrane between some of the convolutions, and considerable fulness of the vessels of the pia mater. The substance of the brain was firm and good throughout. The upper lobe of the left lung adhered firmly for a considerable space to the parietes of the chest, and when torn away, showed that a series of small cavities had been opened, offensive purulent matter escaping abundantly. The substance of both lungs was more dense than natural, varying from a state of simple congestion to that of œdema, and almost of hepatization. There was no tubercular disease. The heart, and other organs, were free from morbid alteration of structure, but contained dark fluid blood.

CASE 7.—*Placenta prævia; delivery and subsequent draining; transfusion, and rally of the patient; returning of flooding, death.*—Mrs. J—, æt. 36, the mother of a family, was daily expecting her confinement, and had a presentiment that she should not recover. Her medical attendant looked in almost daily, and had visited her early in the day, on November 24th, when she was as well as usual. At eight P. M., he was called to her on account of hemorrhage, and found that, in two gushes, she had lost a pint and a half of blood into the chamber-vessel, besides some draining upon the bed-clothes.

Placenta prævia was recognized, and I was with the case, in consultation, at ten o'clock. The patient's condition permitting, and the os uteri being dilatable, turning and delivery were accomplished, without any difficulty, in about half an hour. The placenta immediately followed the child, which was still-born. No considerable loss of blood was sustained, the uterus seemed fairly contracted, and the binder and compress were applied. Considering all danger past, I left the patient under the care of her attendant, at about midnight. At half-past one A. M., she became faint and restless, from draining, rather than from any violent discharge. All proper remedies failing to arrest the sinking, transfusion was resorted to, at about three o'clock. Twelve ounces were injected, with immediate good effect,

indeed the patient rallied completely. Hardly fifteen minutes elapsed, however, before the patient drew attention to the return of the flooding. Irregular contraction of the uterus had thrown the posterior part of the cervix into prominence, as if a tumor existed in its walls; but this vanished as the organ became flaccid from loss of blood. There was a period of this second sinking, at which re-transfusion might have availed, but no supply was to be had. She died at six A. M. Possibly a post-mortem inspection might have shown some cause for the recurring hemorrhage, but it was not obtained. The placenta and membranes came away all together, without trouble; the former showing merely one clean division from centre to edge, through which the hand had passed.

A Treatise on Cancer and its treatment. By C. J. WELDEN FELL, M. D., of the University of New York, late Resident-Fellow of the New York Academy of Medicine, &c. (8vo, London, Churchill, pp. 95, 1857.)

Under a pledge that the full particulars of his system of treatment should be published within a given period, and having first, in confidence, communicated to the surgical staff the nature of the remedies employed by him, the method of their preparation, and the mode of using them, Dr. Fell has been permitted to treat a certain number of cancer cases in the Middlesex Hospital, and the present work is the redemption of his pledge. The work is very short. In it the author glances over the varieties, the causes, and the means of treatment already employed in the treatment of cancer; and having expressed his opinion concerning these means, by saying, "that they almost all fail, and that most of them are not only useless, but absolutely injurious," he proceeds to assert that the *sanguinaria canadensis* is the real remedy both for removing the external manifestations of the disease, and for eradicating the constitutional taint. This is a perennial plant, which is used by the North American Indians on the shores of Lake Superior for the cure of cancer and similar diseases, and is commonly known among them under the name of *puccoon*. The name *sanguinaria canadensis* is derived from the blood-red juice which exudes when cut or bruised. It grows in great abundance in the wild forests and plains of the far West, and in many parts it covers the ground with its large white blossoms. The puccoon appears to have a place in the pharmacopœia of the United States, as a powerful emmenagogue, emetic, and alterative, when given internally, and as an escharotic when applied to fungous growths.

"The first experiments," says Dr. Fell, "made with the puccoon, were upon ulcerative surfaces, and although requiring months of continued application, yet the removal of the tumor was effected, and the patient cured. It was then combined with various substances, with a view to hasten its action; but none appeared to do so well as the chloride of zinc, for, with this compound, large ulcerated tumors were removed in a few weeks with comparatively little, and in many cases no pain; at the same time obtaining by absorption and by the internal use, all the good effects of the puccoon.

"The next object was to adapt the treatment to non-ulcerated tumors; and, as a preliminary step, the cutis was destroyed by nitric acid, and the paste applied; but it was found that the eschar produced by each application was so thin, that it would require a long time to remove a large tumor.

"Incisions about half an inch apart were then made through the eschar, avoiding the living tissues, and the paste spread upon strips of cotton inserted into them daily; this plan succeeded admirably, and is *believed to be entirely original*.

"It was also found that although the action of the puccoon was much hastened by the addition of the zinc, yet it was slow enough to allow its complete absorption, thereby enabling it to exert its peculiar constitutional effects, and at the same time removing the diseased mass in a few weeks.

"The compound generally used is prepared according to the following formula :

R Sanguinariæ Canadensis, ʒss vel ʒj;
Chlor. Zinci, ʒss vel ʒij;
Aquæ, ʒij;
Pulv. Sem. Tritic. Hibern., q. s.

Mix, and form a paste the consistence of treacle.

"Sometimes the sanguinaria is used in the form of a decoction, by boiling it down in water from four to two ounces: in this case no water is used in mixing the paste.

"The proportions of the sanguinaria and zinc are varied in different cases according to the effect produced.

"This is spread upon strips of cloth, cotton, or wool, and inserted daily into the incisions; generally in the course of two to four weeks the disease is destroyed, and the mass falls out in the course of ten or fourteen days afterwards, leaving a flat healthy sore, which generally heals with great rapidity. This treatment refers chiefly to those cases that are well marked, or that have made some progress in their destructive career; but we often meet with other cases of an incipient nature, where the disease, although fully developed, is still in a quiescent or dormant state. In such cases I often accomplish a cure by means of absorption, giving no pain to the patient, and not injuring or removing any important part, as the breast, which must occur if the first mode of treatment is resorted to. Not only is this of use in incipient cancer, but I have seen it of much use when applied to the lymphatic glands, which had become secondarily affected. In such cases, I remove the part primarily affected, *en masse*, by means of the sanguinaria paste, applying at the same time the following ointment spread upon cotton over the enlarged gland or secondary tumor. This ointment is composed as follows (and called the brown ointment):

R Sulph. Zinci, ℥vj;
Sanguinariae, ℥ij;
Myricæ Ceriferæ, ℥j;
Extr. Opii (aquos.),
Ext. Conii, aa ℥vj;
Ungt. Cetacei, ℥vj.

Mist. et fiat ungt.

"In conjunction with this preparation, I use an ointment of the iodide of lead, generally applying each twelve hours alternately. The following is the formula I use:

R Iod. Plumbi, ℥j;
Glycerine, ℥j;
Ungt. Cetacei, ℥ij.

Fiat ungt.

"With a steady persevering use of these two ointments I have often dispersed incipient tumors, which I have no doubt were cancerous.

"These are the external means of treatment I employ, which, although in themselves eminently successful, yet I am not content with them alone, but also pay particular attention to the general health, ordering a nourishing and sustaining diet, besides giving internally the puccoon in small and repeated doses. A remedy that exerts so much influence when applied externally, must be exhibited with caution, I therefore seldom exceed half-grain doses, three times daily. This is given in the powder or decoction; in the former cases I give it either alone or combined with the sixteenth or twentieth of a grain of the iodide of arsenic, and one grain of the extract of cicuta made into a pill; or, if given in decoction, I generally combine it with the fluid extract of taraxacum.

"The ointment of the sulphate of zinc I have been in the habit of applying, with marked success, in cancer of the womb. Unlike the Vienna paste, it can be applied not only with safety, but with impunity, as it does no injury to the adjoining tender parts.

"I have also used these preparations with marked benefit in cases of lupus, both exedens and non-exedens; indeed, I have never known a case in which the judicious use of these remedies has failed.

"Indolent ulcers have long been an opprobrium to the profession from their intractable nature; in such cases, these applications are most efficacious, as I have known phagedænic and indolent ulcers of long standing to be speedily and permanently cured in the course of two or three weeks. In such cases I have often accomplished a cure by using the sanguinaria alone, but even then I find much benefit in using the combinations as described in the above formulæ."

Such, then, being Dr. Fell's statement of his own case, the doubt naturally and necessarily arises as to the efficacy of the supposed remedy. Can, it may be asked, the *sanguinaria* be combined with the chloride of zinc without suffering decomposition? Is the chloride of zinc inoperative? These are questions which require very grave consideration, and in the meantime we may ask, what are the results of the treatment? Does it cause less pain? In answer to this question, the surgeons of the Middlesex Hospital say in their report, "that all the patients have suffered pain during the treatment; some have spoken lightly of their sensations, others have complained much. No one, however, has sustained that acuteness and severity of pain which characterizes the action of caustics, as ordinarily employed; and it has been observed that the pain which has been felt has usually been referred, not to the tumor itself, but to parts at some distance from it, as, in the case of the mamma, to the shoulder and arm." Is it more like to prevent relapse? Upon this point Dr. Fell says, that out of every ten cases treated by the puccon, only three have exhibited fresh signs of the disease; whereas from eight to eight and a fraction have exhibited these signs within this time where the disease has been removed by the knife. Evidence on the subject, however, is wanting, for of the few cases given, the first is only dated July 9th, 1855.

On the treatment of Aneurism by Manipulation. By WM. FERGUSSON, F.R.S., Professor of Surgery in King's College, London, &c. ('Lancet,' 15th Nov., 1857.)
A case of subclavian Aneurism treated in this manner. By ROBT. LITTLE, Esq., of Lifford, County Donegal. ('Med. Times and Gaz.,' 23d May, 1857.)

1. This mode of treatment was brought before the Royal Medical and Chirurgical Society in November last, and the short abstract of Mr. Fergusson's paper is as yet all the information which we possess respecting it. As defined in this abstract, the term is intended to mean a peculiar, forcible squeezing of an aneurismal tumor, with the intention of breaking up the fibrin supposed to be within, so that, being displaced, this fibrin might possibly block up the distal end of the tumor, or the artery leading from it. Then after sketching the various means whereby Nature is supposed to bring about occasional spontaneous cures, and referring to certain cases which had come under his own observation in which spontaneous cures had seemingly been caused by displaced fibrin, Mr. Fergusson proceeds to show that, whilst surgeons had in some degree followed the dictates of Nature, as gathered by experience, in their attempts at cure, they had not, as far as his knowledge went, attempted to imitate the actual displacement of fibrin by any active interference on their part. He then explains how he had for many years entertained the idea that a cure by such a plan might possibly be effected. After many years' watching for a case where, for want of a better plan, such a one as he indicated might be used, a case of aneurism of the right subclavian artery, between and outside the scaleni, came under his notice in February, 1852, wherein, appreciating all the known danger of the usual modes of treatment, he resolved to try this plan. The flat point of the thumb was laid on the aneurism, which was about the size of a hen's egg, and when the sac was emptied of fluid blood, the lower surfaces and supposed contents were rubbed against each other. The pulse, which had been carefully examined, was immediately arrested in all the vessels below the aneurism, and the patient became faint and giddy. In six or seven hours, the pulsations returned, but he repeated the manipulation the next day, with a similar but non-lasting effect on the circulation in the arm; for it was not until seven or eight days that circulation could be readily detected in the arteries of the forearm. The tumor gradually diminished in size and in force; a pulsation, and various indications, particularly the gradual enlargement of a branch of the subclavian artery at the root of the neck, the suprascapular, or the transversalis colli, gave every hope that a cure was in progress. After seven months, at which date the tumor was much diminished, the patient had a severe feverish attack, accompanied with excruciating pain in the tumor, and died after a few days' illness. On dissection, it was found that the axillary artery was blocked up, and that the tumor had suddenly extended or given way in the direction of the axillary plexus of nerves, which was supposed to account for the excessive pain. Another case, in most respects analogous to the above, came ere long under the author's notice, and was treated in the same way.

A series of phenomena followed, similar in every respect to those observed in the former. The tumor in this case underwent other changes, and ultimately disappeared, between the twenty-second and twenty-fourth month after the manipulations. After discussing the principal phenomena connected with these cases, and expressing an opinion that the results in many respects corroborated the views of the author, he left the particulars for the further consideration of those who felt interested in the subject.

2. Mr. Little's case (which requires no comment), is as follows:

CASE.—Daniel M'Monagle, an Albino, æt. 53, admitted into the County Donegal Infirmary, on the 6th October, 1855, with an aneurism of the right subclavian artery, gives the following history of his case:—States that, having been in the habit of dealing in eggs and fish, which he usually carried through the country in a basket suspended on his back by means of straw ropes through which he passed his arms, he first felt pain in the right arm in the preceding month of March, which gradually became so severe that in the month of May he was frequently obliged to sit down on the roadside and remove his burden for a time. Soon afterwards he discovered a tumor above the right clavicle, directly corresponding to the site on which one of the ropes pressed, which also became painful after a short time; and in the beginning of July he perceived "a beating in the lump," which then began to enlarge rapidly. In the month of August he says he had such a feeling of drowsiness that for a fortnight he slept the greater part of each day and night, during which time he lost his appetite and took nothing but milk, and at this time he was unable to bend his fingers. Sleep then suddenly deserted him, and he declares that for a fortnight prior to his admission into the infirmary he did not sleep for a single hour owing to the intensity of the pain in the tumor and along the arm.

Symptoms on admission.—A tumor equal in size to the largest goose egg occupies nearly the entire of the supra-clavicular region, extending from the clavicular attachment of the sterno-cleido-mastoid to the acromial end of clavicle, which has a strong pulsatory movement that is visible from the most remote part of the ward, and is accompanied with a loud bruit de soufflet; it is soft and compressible, and is red and somewhat inflamed on the surface, from which circumstance Doctor Greer, under whose notice the patient first came, greatly feared the aneurism would have burst. There is no appreciable dulness on percussion under right clavicle, but the respiratory murmur is not as distinct as on the opposite side; however this may arise from its being somewhat masked by the loud bruit on that side; the superficial veins of head and neck are considerably enlarged, but he does not suffer either from cough, dyspnoea, or dysphagia; tongue tolerably clean, pulse at wrist 80, and regular; appetite not good. His chief source of complaint is a severe and constant pain extending from the tumor down the right arm as far as the tips of the fingers, which he says is most acute about the middle of the humerus, and he is constantly compressing this part with the other hand, conceiving that it gives him some relief. At first he got sedatives, had cold applied to the aneurism, and each night had a full anodyne, which treatment somewhat moderated the violence of the pulsation, and made him feel more comfortable, and after a few nights when the anodyne had been considerably increased he got some tranquil rest.

In December, he was bled twice from the arm, and ice was kept constantly applied over the tumor for three weeks, without any manifest improvement, except that the redness and inflammatory appearance of the integument covering the aneurism have completely disappeared; in other respects, the symptoms remain unaltered. Having seen the report of Mr. Fergusson's very interesting case, I resolved to follow his suggestion in this apparently hopeless one, and I must confess I did so without any very sanguine expectation of success. Accordingly, on the 1st of January, 1856, by making gentle but steady pressure with my thumbs alternately over the aneurismal sac, I succeeded in displacing some of the coagula, and directing them towards the distal end of the artery. No other local treatment was adopted, but he was ordered the persesquintrate of iron internally. For the first two days no change was perceptible in either the tumor or the arm; but on the third day the pulse at the wrist was manifestly weaker, and the arm somewhat colder than the opposite one. These symptoms gradually increased up to the 10th

day after the manipulation of the sac, when no pulsation could be felt in either radial, brachial, or axillary arteries. The tumor itself had now become more solid, and the bruit and pulsation were both diminished; the violent pain in the tumor and along the arm has also decreased, but now he complains of a sensation of coldness over the right shoulder and scapula, and of a severe pain extending along the side of the neck and back of the head, which increased in severity for a month, and the arm became greatly wasted, and partially paralysed, retaining very little sensation and scarcely any power of motion.

March.—All pulsation in the aneurism having now ceased to be visible, pressure was applied over it.

November.—Both bruit and pulsation have completely disappeared; the aneurism is not more than one-third its original size, and is quite solid; the anterior edge of clavicle feels thin and sharp, from the absorption of its upper surface, caused by the pressure of the sac, and the pain along side of head and neck, heretofore so much complained of, has completely subsided. The arm has regained its natural temperature, and, although still considerably attenuated, he can use it tolerably well, sensation having also returned to it. A very slight pulsatory wave can now be felt in the radial artery, but not in either brachial or axillary. Two superficial arterial branches, of considerable magnitude, can also be traced, running in a transverse direction across the remains of the aneurism, one immediately above the clavicle, the other somewhat higher up.

March, 1857.—Having again admitted the patient into the infirmary within the last few days, for the purpose of examining his condition, the absorption of the tumor is steadily progressing, being now not larger than a walnut. Pulse at the wrist somewhat stronger than at last report, but still not to be felt in either brachial or axillary. Sensation and motion are completely restored to the arm. He is free from all pain, and says he feels perfectly well, and intends resuming his former occupation.

On Amputation by Caustics. By MM. SALMON and MANOURY, Surgeons to the Hospital at Chartres. (1. *L'Union Médicale*, September and October, 1856. 2. *Gaz. Heb. de Méd. et Chir.*, December 19th, 1856.)

The authors relate three cases in which a limb was amputated by successive applications of caustic in the lines in which the knife would have passed in the ordinary flap-operation at the part; and they think this method preferable to the knife, when there is fear of purulent infection, where the patient is extremely reduced in strength, where there are many recent purulent collections about the part, and in the case of traumatic or senile gangrene. They do not trust, however, to the caustic for dividing the principal artery, but they leave this to the last, and employ the ligature and knife in dealing with it.

CASE 1.—A man, æt. 35, whose right arm had been torn by machinery. Eight days after the operation the parts had become gangrenous, and it became necessary to remove the limb at the shoulder-joint. The lines selected were those of the ordinary flap-operation—the position of the main artery being marked with ink to show where the caustic was not to go. The caustic used was the Vienna paste. A quarter of an hour after the caustic was applied, the eschar was scored with a knife, but not so deeply as to cause pain, and the groove was then filled with a strip of lint, smeared with a paste, consisting of chloride of zinc and alum. In the evening (second sitting) the eschar was broken down and raised with a spatula, and the caustic again applied. The night was sufficiently good, and there was no shivering. On the second day the caustic was applied twice—morning and evening; and so also on the third and fourth day. On the evening of the fourth day, the soft parts being sufficiently divided, a ligature was applied to the brachial artery; and the knife having been applied where it was necessary, the bone was sawn through. Besides this, no further particulars are given, beyond the statement that everything went on well, and that the stump was well formed.

CASE 2.—A man, æt. 30, somewhat intemperate, broke both the bones of his forearm immediately above the wrist. Fifteen days afterwards the parts below the injury had become gangrenous, and amputation was necessary. This amputation was performed immediately below the elbow by twelve applications of caustic, these

applications extending over seven days. This was done without any hemorrhage, although the main vessels were divided by the caustic. Five days afterwards hemorrhage was set up, and it was necessary to apply a ligature to the vessel. As to the rest, the recovery is said to have been uninterrupted and perfect.

CASE 3.—This was that of a man, *æt.* 43, suffering from osteo-sarcoma of the lower extremity of the femur. The tumor was as large as a man's head, and spontaneous fracture of the femur had occurred through the body of the bone. The flap-amputation was performed below the trochanter by five applications of caustic. The patient was admitted into the hospital at Chartres on the 1st of September, and the operation was undertaken on the 4th. In the first instance the lines of the flaps were marked out (leaving the part immediately above the femoral artery), by rubbing them with a crayon of caustic potass; and in consequence of the length of these lines twenty minutes were occupied in this part of the process. In the next place, strips of lint smeared with chloride of zinc were fastened over the same lines, and a bandage was applied over them to keep them in their place. During the night following the patient was sleepless, but there was no fever, and no marked degree of pain. On the following morning there was still no fever. The eschar, on examination, was found to be depressed and grayish-blue in color, and there was very little inflammation in the neighboring parts. This eschar was then divided throughout its length by means of scissors—the division including the proper skin and the subcutaneous cellular tissue and veins. Only a few drops of blood escaped in this part of the operation. After this, the caustic crayon was applied in the groove made by the scissors, and strips of lint smeared with chloride of zinc, were pressed into the groove. Any little bleeding which followed the application of the solid caustic was immediately arrested by the strips of lint, and the whole procedure occupied about half an hour. The patient suffered more during the second sitting than during the first; but notwithstanding this, there was no fever, and the appetite did not fail. The night was sleepless, but there was scarcely any pain.

6th (the third sitting).—The cauterization was repeated, and the muscular fibres were broken up to a considerable depth by the caustic. This was attended by acute pain, but there was no hemorrhage, and the day passed without fever. In the evening an opiate was given, and there was some sleep in consequence.

7th (fourth sitting).—The cauterization was repeated, the muscular tissues were broken down to the immediate neighborhood of the bone, and still there was no hemorrhage. In the evening, however, there was some fever, and the countenance had an anxious expression.

8th (fifth sitting).—The cauterization was repeated, and a certain amount of blood escaped from the deep femoral artery, as its tissues became softened under the action of the caustic potass. This hemorrhage, however, was only slight, and it ceased altogether on the application of the strips of lint smeared with the chloride of zinc. In the evening the patient had much pain in the limb, which was greatly swollen—the pain arising from the action of the caustic upon the sciatic nerve, and the œdema from the obliteration of the deep veins. The night also was without sleep.

10th (sixth sitting).—The femur being now exposed, the limb was removed by dividing the remaining soft parts, and sawing through the bone, chloroform having first been given at the earnest solicitation of the patient. After this, the flaps were brought together; and a pledget of charpie having been interposed between them, the stump was dressed in the ordinary way. The rest of the day and the night following passed favorably.

11th.—No fever.

12th.—Everything going on satisfactorily—pulse strong and full, skin perspiring, tongue moist, appetite good.

14th.—The sloughs are beginning to be detached at the edges, and a healthy supuration is beginning to be established. During the week following there is nothing remarkable to report.

20th.—The sloughs are detached, and a healthy granulating surface is left behind. Examining the stump carefully, the flaps were found to be insufficient to cover the bone well, and it was decided to remove a further portion—an operation which was performed with the saw after the soft tissues immediately surrounding the bone had been first broken down by an application of the caustics. Very little

pain was caused by this procedure, and the satisfactory progress of the case was not at all interrupted.

22d.—During the night, the stump was a good deal disturbed by the patient having attempted to get up in a dream.

October 1st.—The ligature came away.

November 1st.—A portion of the bone, which had been projecting for some days, exfoliated and came away.

20th.—The stump is cicatrizing; the patient eats with appetite, and is gaining flesh; he is also able to get up and walk about, with the aid of crutches.

27th.—From this time to the 7th of December the patient suffered from a sharp attack of erysipelas in the head and face; but in spite of this the stump went on cicatrizing, and the suppuration continued healthy. This is the latest account. Wine, and a liberal supply of food, were allowed throughout.

From some comments which accompany this case, it appears that the patient was not aware that his limb was about to be removed until the time had arrived for dividing the great vessels and bone. On the contrary, his impression was that the diseased growth alone was being attacked. It is hinted also, that his sufferings were much greater than would appear in the preceding account of the case, particularly during the application of the caustic potass. And further it is stated, that in another case, M.M. Manoury and Salmon are disposed to trust altogether to the caustic for dividing even the large vessels. O wonderful *vis medicatrix naturæ*!

ART. 5.—On the Deaths following the inhalation of Chloroform in surgical operations. By T. HOLMES, Esq., F.R.C.S., Surgical Registrar to St. George's Hospital. ('British Medical Journal,' 24th Jan. and 20th Feb., 1857.)

These papers contain the records, carefully tabulated, of fifty deaths under chloroform, occurring during the years 1848–55 inclusive, in thirty-nine of which post-mortem examinations were made, and in the great majority of which the chloroform was given by qualified medical men. These records are compiled after a careful search through the volumes of the medical periodicals published at home and abroad; and Mr. Holmes states that he has not wilfully omitted any, except two, both of which were extracted from non-medical papers without any guarantee as to their authenticity—one evidently an American hoax.

The following facts arise out of this inquiry:

1. *Sex.* This is noted in 44 cases; 21 were males, 23 females.
2. *Age.* All were persons in the middle period of life; no children, and only one man above the age of 60.
3. Most of the operations were of a comparatively trifling character.
4. The chloroform was given on a handkerchief, cloth, towel, or piece of lint, in 27 cases; in a sponge in 4; in an inhaler or other apparatus (not described) in 8; on Dr. Snow's inhaler in 3. In 8 cases the apparatus is not specified.
5. The quantity used was 3j and under in 13 cases: 3ij and under in 12; 3ij–3ss in 3; a larger quantity in 8; not specified, 14.
6. The time is noted in 32 cases: 2 minutes and under in 15 cases; 2–5 minutes in 6 cases; 5–10 minutes in 6 cases; above 10 minutes in 5 cases (in one of them, 40 minutes).
7. The symptoms are intelligibly described in 36 cases.
In 19 there was no previous struggle; in all of these, except one, the pulse ceased before or at the same time with the inspiration.
In 17 there was previous struggle; in 4 of these lividity and failure of respiration was next noticed; in 13, failure of the pulse, or of the bleeding from the wound, generally preceded by pallor.
8. Of 33 cases in which post-mortem examinations were made:
 - (a) Eight, viz., Nos. 15, 22, 31, 32, 34, 42, 46, 50, showed no appreciable morbid appearances, i.e., referable to chloroform: for one (No. 34) is said to have presented extravasation of blood in the spinal canal.
 - (b) The heart is reported *soft* or *flaccid* in 10 cases, Nos. 3, 9, 16, 19, 20, 23, 24, 27, 30, 46; *fatty* in 9, Nos. 26, 29, 33,* 35, 36, 37, 38,* 41, 45. The case marked thus* were two of the oldest patients in the list, and the morbid appear-

ance seems not to have exceeded the traces of fatty degeneration usually found at that period of life. The heart was *flaccid* and *empty* in 7 cases, Nos. 2, 5, 8, 9, 10, 14, 48; *full* in 1, No. 1.

The *blood* was usually fluid; air was found in it in 3 cases, Nos. 2, 5, 24.

(c) The *lungs* were congested in 14 cases, Nos. 1, 2, 5, 8, 9, 10, 16, 19, 20, 23, 28, 45, 46, 50.

(d) The *brain* was congested in 7 cases, Nos. 1, 14, 16, 20, 23, 28, 44.

(e) *Other viscera* were congested in 6 cases, Nos. 1, 10, 16, 20, 24, 30.

(f) There was organic disease in 4 cases besides that of the heart, viz., aneurism, No. 39; phthisis, No. 3; atheromatous arteries, Nos. 33, 38. The latter had also granular degeneration of the kidneys. It will be observed that the latter two had also fatty degeneration of the heart; but to a slight extent.

In these papers Mr. Holme's object has been to show what the mortality after chloroform has really been, and to inquire whether the results of *post-mortem* examination have given us any clue for assigning it to its efficient cause—and in reference to these two points the facts appear to show—

1. That the reported mortality in the British Islands has been less than six *per annum*; that a great number of these cases occurred in private practice; and that as many of them were disclosed by means of coroner's inquests, it seems probable that we do really hear of most of the fatal cases which occur in the United Kingdom.

2. That the post-mortem appearances have not been sufficient to indicate any uniform cause of death; that the importance ascribed usually to fatty degeneration of the heart is greater than experience would warrant; that, from the number of cases of persons previously in perfect health, and the rapidity with which death was produced, there is a strong presumption that the result was due to imperfect methods of administration, or carelessness on the part of the administrator. Further, from the experience of hospitals in which a rational method has been adopted and due caution exercised, we are justified in believing that chloroform is as safe in its action as any drug which produces narcotism by mixing with the circulating blood, can in the nature of things be expected to be.

On the use of Amylene as an Anæsthetic. By JOHN SNOW, M.D., F.R.S. ('Medical Times and Gazette,' 17th and 24th Jan., 7th Feb., and 11th April, and 10th May, 1857.)

Amylene was first discovered and described in 1844, by M. Balard, Professor of Chemistry to the Faculty of Sciences of Paris. It is made by distilling fusel oil with chloride of zinc. M. Auguste Cahours had given the name of amylene five years previously to a product which was isomeric with it, and made nearly in the same manner, but is now termed paramylene. Amylene itself is a colorless and very mobile liquid of extremely low specific gravity. M. Balard has not stated the specific gravity; but Dr. Snow has found it to be 0.659 at 56°. It is very volatile, boiling at 102° Fahr., and the specific gravity of its vapor is 2.45. It is a compound of ten atoms carbon and ten hydrogen, and it bears the same relation to fusel oil, or amylic alcohol, that olefiant gas or ethylene bears to common alcohol. It burns with a brilliant white flame. It is soluble in alcohol and ether in all proportions, but is very sparingly soluble in water. As far as Dr. Snow can ascertain, it requires rather more than 10,000 parts of water for its solution. It has an odor somewhat resembling naphtha; some persons think the odor agreeable, and some think it unpleasant; the odor is not so strong or permanent as that of sulphuric ether, and it does not remain long in the patient's breath. The vapor of amylene is much less pungent than those of ether and chloroform, and, therefore, it is much easier to breathe, and has not caused coughing except a little in two patients with catarrh. Dr. Snow says that he was not aware of the existence of amylene till a few months ago, or he should have tried it sooner; for, judging from experiments which he had made on analogous substances, there could be no doubt of its causing insensibility when inhaled; but he could not tell, without trial, whether it might not be too powerful, or otherwise objectionable, in its action. He made several experiments on small animals with amylene, and after inhaling small quantities of it himself, he administered it in King's College Hospital, commencing with cases of tooth-drawing,

on November 10, 1856, and he had more recently given it in the larger surgical operations. He finds, from experiments on animals, that to induce a very complete state of coma, which he calls the fourth degree of narcotism, it requires that a fifth part as much amylen should be absorbed as the blood is capable of dissolving. To cause the second degree, or that state in which consciousness and volition are disordered, but not abolished, it requires a tenth part as much as the blood would dissolve, whilst to induce the third degree of narcotism, which is as far as he had found it necessary to carry the effect in the human subject, it required an intermediate quantity, or about fifteen per cent. In the case of chloroform, ether, and several allied substances, the proportion which required to be absorbed, is far less, being only, for the fourth degree of narcotism, about one twenty-eighth part as much as the blood was capable of dissolving. Benzin, which was a simple carbo-hydrogen, like amylen, was intermediate between this and the above substances in the relative amount of it which was absorbed, one-seventeenth part as much as the blood would dissolve being required to induce the fourth degree of narcotism. Whilst the relative amount of amylen absorbed is high, the actual amount is extremely small, owing to its very sparing solubility in the serum of the blood and other watery fluids. He calculates that in the adult human subject the amount of amylen circulating in the system, in the third degree of narcotism, is less than three minims. Viewed in the light of the small quantity which required to be absorbed to cause insensibility, amylen is a very powerful agent, but when considered in relation to the quantity which was consumed during inhalation to the usual way, it was very far from being powerful. This arises from the great tension and the small solubility of the vapor, in consequence of which it was, with the exception of a small fraction, expelled from the lungs again without being absorbed. It takes from three to four fluid drachms of amylen to cause insensibility in the adult, whilst less than a drachm of chloroform is usually sufficient. The quantity of sulphuric ether required to cause insensibility in the adult is eight to ten fluid drachms, one half of which was absorbed into the blood. In a protracted operation the quantity of amylen used is greater than that of sulphuric ether, as the small quantity of the former which is absorbed is quickly exhaled again from the lungs, and requires to be constantly replaced, whilst the large amount of sulphuric ether, when once absorbed, takes a much longer time to evaporate in the breath. It is necessary for the patient to breathe air containing not less than fifteen per cent. of vapor of amylen, in order to reach the third degree of narcotism, or that condition in which consciousness and voluntary motion are entirely suspended, the pupils being usually contracted and turned upwards, but the muscular system not necessarily relaxed. The patient must inhale the amylen at the rate of rather more than a fluid drachm a minute; in this way he becomes insensible in three minutes or rather less; but if the vapor was not inhaled in a sufficient volume, he would not become insensible by continuing the inhalation, for however long a time; the quantity of vapor must be increased, or it would not succeed. Dr. Snow has administered the amylen in his ordinary chloroform inhaler, which he had, however, got somewhat enlarged. In the use of amylen, absence of pain had been obtained with less profound coma than usually accompanied the employment of chloroform and ether. There are some cases, indeed, in which the minor parts of an operation, under these latter agents, might be performed without pain, whilst the patient was in a semi-conscious state, or even altogether conscious, but they formed the exception, whilst in the use of amylen, the patient had very often been partially conscious during the operation. In a case in which Mr. Fergusson removed a large melanotic tumor from the groin, the man repeated some verses very accurately whilst the arteries were tied, and was awake and talking to the bystanders whilst the wound was being stitched up, but felt nothing of it. The pulse is increased in frequency and force during the inhalation of amylen to a greater extent than happened with chloroform; the respiration also is very often accelerated, about as often as in the inhalation of ether, and more frequently than with chloroform. There has not been much increase of saliva from the use of amylen, and Dr. Snow had not yet met with the profuse flow of saliva which is often troublesome in the employment of chloroform and ether. There has been no sickness in any of the operations in which he had exhibited the amylen, nor any of the depression which so often preceded and accompanied the sickness from chloroform and ether; and there has been hardly any

struggling or rigidity in any of the patients, although several of them being robust men, a good deal of both might have been expected before complete insensibility, if chloroform had been the agent employed.

Dr. Snow is of opinion that amylene would be perfectly safe with careful management. Sulphuric ether seemed to be perfectly safe in whatever way it was used; although it had been blamed for causing death, no fatal accident seemed to have been really occasioned by it. This arose from the circumstance that the dose of ether occupied so much space in the form of vapor, that it could not enter the system except by degrees, and its effects were necessarily produced gradually. In regard to chloroform, however, even a fatal dose occupied but a very small space in the form of vapor, and unless great care was taken to have it largely diluted with air, it might act with dangerous rapidity, and the point of safety might easily be overstepped. The quantity of amylene which required to be inhaled, occupied in the form of vapor, a volume intermediate between that of the vapor of chloroform and that of ether, and in all the ordinary methods of inhalation it must become mixed with a large portion of air. The relative advantages of amylene, in Dr. Snow's opinion, may be summed up as follows: In regard to its odor, it is more objectionable than chloroform, but much less so than sulphuric ether. In the amount which sufficed to induce insensibility, it is also intermediate between these two agents. In regard to its pungency, it has a great advantage over both ether and chloroform, being much less pungent than either of them; on this account the patient could always begin to inhale the amylene of full strength within half a minute, and the operation might generally be commenced within three minutes. It has an advantage in preventing pain with a less deep stupor than was occasioned by the other agents, and in the ready waking and recovery of the patient, it had an advantage over chloroform, and a still greater advantage over ether. The almost entire absence of struggling and rigidity in the use of amylene is another advantage it possesses; and the greatest advantage of all, if it should continue to be met with, is the absence of sickness from its use.

At first, moreover, Dr. Snow was disposed to think that the use of amylene would be free from the dangers which are attached to the use of chloroform, but, unfortunately, this hope has been already shown to be a delusion. Even the presence of Dr. Snow himself was not sufficient to avert the fatal result.

Case of death from amylene.—"Mr. Fergusson," writes Dr. Snow, "requested me to assist him, on the 7th instant, in the case of a gentleman on whom he was about to operate for fistula in ano. The patient was thirty-three years of age and was in good health, with the exception of the local complaint, although he had lived somewhat freely. Mr. Fergusson examined the patient's chest the day before the operation, and found the sounds of the heart to be normal. I felt his pulse just before he began to inhale. It was natural, but somewhat accelerated, as usually happens just before an operation. He was lying on his side in bed. About six fluid drachms of amylene were put into the inhaler (I never intentionally use all I put in, but add more before the paper becomes dry), and he breathed steadily and gently. The valve was gradually advanced over the opening in the face-piece till it about three-quarters covered it, and the patient appeared to become quietly unconscious in about two minutes. He breathed quickly for a few inspirations just as he appeared to become unconscious. Just after this Mr. Fergusson came and felt the patient's pulse, and he says it was very good. I felt it also. I looked at my watch at this time, and it was two minutes and a half or two and three-quarters from the beginning of the inhalation. Mr. Fergusson commenced to use the probe, and, finding the patient did not flinch, he began to use the bistoury. Mr. P. C. Price assisted at the operation. I held the patient's thigh with one hand, as I often do in such an operation, lest he should flinch. He did not flinch, however, but kept his limbs tense, without moving them. Just at this moment I observed that the valve of the face-piece, which I had left three-quarters covering the opening, had moved so as to cover it entirely, but I cannot say whether or not the patient had taken an inspiration a little stronger than I intended, and thought nothing of the matter, as I have frequently had to close the valve completely in giving amylene. It could not, however, have been many seconds in that position, for I paid no attention to the operation, except so much as was requisite to guide me in what I was doing. The inhalation was discontinued at the moment I have mentioned,

and on looking round directly after I found that the operation, which had apparently been but one incision, was finished. I now began to feel for the pulse, more out of constant habit, and from a scientific curiosity, than from any supposed necessity of doing so. Although it had been good only half a minute before, I could not find it in the left wrist, and only a slight flutter in the right one. His breathing was, however, good, indeed quite natural, and he did not seem even to be very insensible, for there was some motion both of his features and limbs, as if he were about to awake. I watched the patient with great anxiety, thinking that surely his good and natural breathing would restore the pulse, and feeling that at all events this superseded any other measures at the moment. In two or three minutes, however, he seemed to be getting more insensible; he did not wink on the edge of the eyelids being touched, and the breathing was getting slower and deeper. I called Mr. Fergusson's attention to the patient, and both he, who was preparing to go away, and Mr. Price, who had all the time been standing by the patient, were surprised to find that anything could be wrong, as they had seen the patient going on apparently so well, not only during the inhalation, but after it was discontinued. They dashed cold water in his face, which did not seem to have any effect. His countenance was now livid and his breathing of a gasping character. It soon began to leave off, with the exception of deep, distant, gasping inspirations, and we therefore began to perform artificial respiration, by Dr. Marshall Hall's method, placing him in the prone position, and bringing him partly round, while Mr. Price kept the mouth open. The air could be distinctly heard passing through the larynx during this motion. We also tried pressing on the chest with the head on one side and the mouth open, which answered very well as regarded the ingress and egress of air. Inflation from mouth to mouth was tried, but did not seem to answer so well. Although deep gasping inspirations were made by the patient till fully ten minutes had elapsed from the failure of the pulse, the measures used had no effect; I believe that I heard a feeble motion of the heart even after this period; and, as Mr. Fergusson perceived a slight pulsation at the same time in the right wrist, I was probably not mistaken. There were no further signs of life after this, although the artificial respiration was continued for a long time. I am quite sure as to the length of time respiration continued after the failure of the heart's action. The pulse ceased to be distinctly perceptible at ten minutes before five, and the patient was still breathing at five o'clock. He had not taken food for some hours, but drank a pint bottle of ale a little while before the operation. A good portion of amylene remained in the inhaler after it had been uncovered for an hour and a half."

On a mode of preventing the Fears and Apprehensions connected with a Surgical Operation. By M. DIDAY, formerly Senior Surgeon to the Venereal Hospital, at Lyons. ('Lancet,' 29th November, 1856.)

In one of a series of letters, in which medical topics are treated with great soundness of judgment, M. Diday has lately directed attention, in the *Gazette Médicale de Lyons*, to a very kind mode of lessening the apprehension of persons who have consented to submit to capital operations, and which mode has been put in practice at the Military Hospital of Bordeaux. When it has been settled that a limb is to come off, the precise day is left undecided, and the patient is allowed, if the case admits of it, to forget the painful circumstance. Some morning the house-surgeon, in going round, says to the poor man, "By-the-bye, as you are to be operated upon, you may as well get accustomed to the smell of chloroform, and learn to inhale it." Thereupon he applies the mouthpiece, lets the man quietly inhale the semi-lethal vapor, and allows complete anæsthesia to take place. The patient is then carried to the operating theatre, where everything has been prepared beforehand, and every one is ready for his task. The operation is performed, and the poor sufferer wakes delighted that it is all over, and that he has been saved the pangs of trepidating expectation.

Successful Ligature of the Arteria Innominata. By M. PEIXOTO, of Rio Janeiro. ('Mém. de l'Acad. Imp. de Méd.,' t. xix, 1857.)

This artery has been tied ten times, and in every instance the operation has

terminated unsuccessfully. Nor is this case an incontestable instance to the contrary, for the ligature was not tightened so as to place an impassable barrier to the flow of blood. It was, indeed, a provisional ligature—*ligature d'attente*—which was intended to be tightened if any serious bleeding was found to follow the separation of a ligature which had been applied to the common carotid.

CASE.—M. M.—, a Portuguese physician of eminence, æt. 33. In 1832 an erectile tumor was developed in the right ear, and for this, M. Nélaton placed a ligature around the posterior auricular in 1845. When the ligature separated there was considerable hemorrhage, and this hemorrhage recurred at intervals during the next six years. On the 14th of November, 1851, M. Moura being at Rio Janeiro, M. Peixoto tied the common carotid, in the middle of its course, for a brisk attack of hemorrhage, and shortly afterwards he placed a ligature around the tumor, and caused it to separate by sloughing.

On the 8th of December, M. Peixoto applied a *ligature d'attente* to the trunk of the innominate, having been led to take this step in consequence of threatened hemorrhage from the part where the carotid was constricted by the ligature. This precaution, however, was not necessary, for the ligature separated from the carotid without any hemorrhage, and the patient recovered from the tumor and the operation without any further impediment. The *ligature d'attente* was removed in two or three days after the separation of the other ligature, when there appeared to be no longer any fear of hemorrhage.

The details of this case are by no means satisfactory, and it may be doubted whether the arteria innominate was really included in the ligature. At any rate there is nothing to show that the vessel included was more than the root of the common carotid; and if the arteria innominate was included, the ligature was not tightened.

On Excision of the Shoulder-Joint. By the late E. R. BICKERSTETH, F.R.C.S., Surgeon to the Royal Infirmary at Liverpool. ('Liverpool Medico-Chirurgical Journal,' Jan., 1857.)

In order to accomplish excision with the least difficulty, Mr. Bickersteth prefers the plan recommended by Mr. Syme. A large, straight, sharp-pointed bistoury should be introduced immediately under the centre of the acromion, and carried downward close upon the bone to near the insertion of the deltoid, and then from the termination of this incision another should be directed upwards and backwards, so as to divide the posterior part of this muscle. Ample room is thus obtained to turn out the head of the humerus should this prove necessary. But, before proceeding to this step, it will be well to examine carefully with the finger, as, possibly, the disease may prove to be necrosis, and admit of cure by the simple extraction of the sequestrum. If this is not the case, however, the flap must be separated from the bone, and, the finger being used as a guide, a probe-pointed curved bistoury should be introduced against the back of the head of the humerus, and its sharp edge pressed firmly upon it, while an assistant at the same time rotates the arm outwards, pulls it downwards, and draws the elbow across the opposite breast. In this way the head of the bone is projected from the wound, and a few remaining touches with the same knife effect the division of the muscular attachments. The bone is then sawn through below the diseased portion, and free access obtained to the glenoid cavity. If it is only superficially diseased, the incisions already practised are sufficient to afford room to enable the surgeon, with a pair of narrow-bladed cross-cutting forceps, to remove the surface of the glenoid cavity; but if the bone is deeply ulcerated, and particularly if it feels rough, and deprived of its periosteum to any extent beyond the region of the neck, it is impossible to reach the whole of the disease without enlarging the wound. This is best accomplished by extending the posterior incision in a curved direction, the convexity being upwards, across the body of the scapula, to an extent corresponding with the supposed extent of the disease. A good deal of hemorrhage results from this proceeding, and it is better to secure the divided vessels without delay, as the remaining steps of the operation are necessarily somewhat tedious. However, the facility it affords is very great, for after the muscles have been raised with the flap from the bone, the operator is able to remove without difficulty a very considerable portion of the

scapula; as much, indeed, as is usually liable to disease that has originated in the shoulder-joint. The instrument that will be found most useful in taking away the carious bone, is a pair of strong cutting pliers, the blades of which are set at an obtuse angle with the handles. They must be introduced with the finger as a guide, and piece after piece cut away till the whole of the disease is fairly removed, for on this depends the success of the operation. The wound should then be cleared of clots, and several sutures introduced to keep the flaps in apposition. The arm must be placed against the side, and the elbow well supported so as to prevent any movement of the part.

There are several advantages gained from this proceeding: the first incision allows a free examination of the joint, and enables the operator to determine how much of the bone it is necessary to remove. The second divides only the posterior half of the deltoid, and while it leaves the arm still supported by the anterior part, it affords ample room for the excision of the head of the humerus, and of the *surface* of the glenoid cavity. Again, by extending the same incision across the lower part of the body of the scapula, as much of that bone may be removed as is found desirable. If, on the other hand, amputation appears essential, the incisions first practised require only to be extended across the front and back of the arm, and very excellent flaps are formed.

As regards the after treatment of excision, it is of the greatest importance to prevent the least movement of the arm. The part should be treated as if it were a compound fracture. Let the surgeon bear in mind that the chief danger is in the exhausting and very profuse discharge that invariably follows an operation of this kind; and let him remember that any movement of the bones in the interior of the wound will increase the irritation, and render the suppuration more profuse. In dressing the wound, he must not be tempted to raise the arm or lift up the elbow, with the idea of thereby facilitating the escape of matter. If there is any lodgment or hinderance to its escape, it is far better to make dependent openings.

When the shoulder is dressed, if the patient is sitting up, an assistant should carefully steady and support the arm during the whole time. In addition to the ordinary sling, under the arm and round the joint of the elbow, Mr. Bickersteth has found great comfort and support afforded by a long broad strap of strong plaster fastened under the elbow, and brought up, first in front along the upper arm, and then over the top of the shoulder. This may be allowed to remain on as long as it will adhere. It affords support to the arm during the time the sling and bandages are being changed, and it serves in some measure to fix and steady the scapula. When the patient is in a recumbent position, small pillows should be placed under the upper part of the arm, as otherwise it is liable to get displaced. After the sutures have been removed, strips of adhesive plaster may be laid over the lines of incision; and when union and a sufficient degree of consolidation have taken place, the supports may be removed, and passive motion of the arm commenced.

So far from making it a practice to administer regular and periodic doses of opium after a capital operation, Mr. Bickersteth has seldom found it necessary to order even a single draught; on the contrary, he is satisfied that as a general rule, when an operation is undertaken for long-standing disease, the patient sooner recovers from the shock, and sooner regains appetite and power of digestion when opium is not given. The pain that follows any severe operation lasts only for a few hours, and if this period can be passed without the administration of opium, there will be less thirst, a cleaner tongue, and a condition more calm and comfortable on the following days.

Mr. Bickersteth relates three cases in illustration. In two of these the glenoid cavity of the scapula was extensively diseased; and in one a part of the body of the bone, the inferior costa, together with the entire neck, required such extensive ablation, that the coracoid process was detached from its base; and yet, even after this serious mutilation, the case progressed most satisfactorily. Twenty-three days after the operation, the wound had healed, the discharge almost ceased, and the arm shortly recovered such power, that the patient was able to wash, carry considerable weights, and attend to all her household duties.

On Disarticulation of the Scapula from the Shoulder-joint.—By JAMES SYME, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh. ('Lancet,' March 7th, 1857.)

This case is one which will probably tend to encourage greater freedom in operating for diseases of the shoulder-joint as well as scapula, inasmuch as it proves that the scapula may be removed without serious loss of blood, that the resulting wound does not occasion excessive discharge, and that the arm becomes afterwards a serviceable limb. It was brought before the Royal Medical and Chirurgical Society, on the 24th February, 1857.

CASE.—Janet S—, nearly seventy years of age, was admitted into the Royal Infirmary of Edinburgh, on the 18th of September, 1856, on account of a large tumor involving the left scapula. In size and form it resembled a cocoa-nut. In some parts it was as hard as bone; in others, elastic but firm. It presented a distinct bruit, and communicated a strong pulsatory movement. The tumor was first noticed about six months before, when it was the size of an orange. Considering, on the one hand, that the extension of the growth into the axilla rendered relief by a partial removal of the bone impossible,—the unsatisfactory result of that operation in Mr. Liston's recorded case,—the fearful mutilation which it would involve,—and the small hope of a successful issue to so formidable a procedure at her advanced age; whilst, on the other hand, the chief obstacles to recovery seemed likely to be serious hemorrhage (which it was thought might be prevented), or excessive drain upon the patient's strength in the subsequent suppuration,—Mr. Syme determined to remove the entire bone. This was done as follows: an incision was made from the acromion process transversely to the posterior edge of the bone, and another from the centre of the first directly downwards below the lower margin of the tumor. The flaps thus formed were then reflected. The scapular attachment of the deltoid and the connections of the acromial end of the clavicle were next divided. With a view to prevent the most serious source of hemorrhage, the sub-scapular artery was next cut across, and secured. The joint and circumference of the glenoid cavity were next divided; the finger being hooked under the coracoid process greatly facilitated the division of its attachments, and enabled the operator to pull back the bone, and separate its remaining attachments with rapid strokes of the knife. The limb was supported and retained in situ by a bandage. The tumor, on examination, was found to consist of a nearly uniform expansion of the bone into a bag, partly membranous, partly osseous, containing a cerebriform growth, and extended to the margin of the glenoid cavity and spine of the bone. All seemed to promise well after the operation; the wound healed rapidly. At the end of a fortnight the amount of discharge was scarcely sufficient to stain the bandage. The shoulder assumed a very natural appearance, and it seemed that by the support afforded by the clavicular portion of the deltoid, together with the action of the pectoralis and latissimus dorsi, the limb would be able to execute a fair degree of motion,—indeed, the woman was with difficulty prevented from using the limb too freely; but the patient's strength did not improve in a corresponding degree, and towards the end of November she suddenly sank, and died on the 1st day of December.

On Puncture through the Abdominal Parietes in impassable Obstruction of the Bowels. By Sir HENRY COOPER, M.D., Lond., Physician to the Infirmary, Hull. ('British Medical Journal,' 21st Feb., 1857.)

The interest of the case which is here recorded arises chiefly from the simple easy, and effectual means employed in its relief, and from the successful issue. The disadvantages of these means are, the wounding of both layers of peritoneum, and of the bowel itself. With the precautions described, however, the chances of peritoneal inflammation do not seem to be materially greater than in ordinary tapping; and a wound of the intestine is implied in every case where an artificial opening is formed. The uncertainty as to the part of the intestine perforated, is a disadvantage shared in common with other operations. The part chosen is the most distended part, and therefore of necessity a point above the stricture, and certain to

give relief; so that there need not be any hesitation or delay in searching for particular portions of the intestine. The opening is of necessity small; this is a serious objection, but it may be obviated by the size of the trocar and the canula used, by the free use of sponge-tents, and by maintaining a mouldable state of the fecal mass.

The advantages are: the puncture is momentary, and unattended with pain or shock to the system at the time, or with any after constitutional effect; a most important consideration, where the patient is already in the last stage of an exhausting malady; the certainty of immediate relief if the prominent part is selected; and hence the absence of any doubt or difficulty in determining the site of the obstruction; and if the puncture does not succeed, the patient's death is at least not accelerated. There are some advantages also as regards the management of the opening afterwards; it is altogether under the patient's control; it is not liable to the prolapse and tension of the mucous membrane, or closure by septum which interfere with other artificial openings; and, lastly, it is not so deep-seated as the lumbar anus, and therefore not so liable to obstructions and infiltration between the inner opening and the skin.

The operation is applicable to any form of intestinal obstruction where there is great distension (and this condition is rarely absent); and is particularly indicated in the later stages of schirro-contracted rectum, or other malignant disease, where the object is to prolong life for a few days or weeks, and mitigate suffering at little or no expense of vital power.

CASE.—M. A. K.—, æt. 34, a robust, healthy, unmarried female, stated she had had no relief from the bowels since a scanty and imperfect evacuation on the 2d. She had for many months suffered from abdominal pains, constipation, difficulty in passing stool, and distension and tenderness in the right iliac region. She had now the usual symptoms of obstruction, with eructation and nausea, but little or no actual vomiting. Calomel and rhubarb, with saline purgatives, were given. O'Beirne's tube was then used, and passed fourteen inches, and large quantities of gruel, castor oil, and turpentine, were injected, but returned unchanged. This plan was followed till December 13th. She then took two grains of opium every three hours, up to six grains, with no other result than that of abating the pain, which had become intense, and procuring refreshing sleep. At this time I first saw her, and formed a very unfavorable opinion of the case. There was great prostration: a sunken, anxious, suffering countenance; rapid, weak pulse; very great abdominal distension; hiccup, and occasional vomiting of offensive matter. Careful examination of the abdomen detected no tumor or induration, but a uniform tight distension, except a slightly-prominent roundness about the right iliac fossa, where was some additional tenderness. Opiates and enemata, with fomentations, were used till the evening of the 15th, when the symptoms being all aggravated, and the powers of life flagging, it became necessary to determine whether any and what operation should be performed. In determining this question, the following points were important. The rectum and sigmoid flexure were not the seat of obstruction, as was clearly shown by the passage of the tube, and the large quantity of injection (three or four pints) retained. The situation of the prominent distended point indicated the cæcum as the seat of the stricture, the distension probably consisting of the caput coli or immediately contiguous portion of the tube. The tenderness at this point indicated that some peritoneal action had been set up here, and that *probably* the bowel and abdominal parietes might be adherent. The abdominal walls, as proved by percussion, were thin at this point, and no important part would be endangered by piercing them. These considerations, pressed on us by the extreme urgency of the symptoms, determined us to puncture this prominent part of the gut with the largest sized trocar, and thus, at all events, to secure temporary relief. The operation was precisely that of *paracentesis abdominis*, except that it was not performed in the median line, and had therefore to pierce muscular fibre, an incident not without a favorable bearing on the after issue of the case as affecting the patency of the opening. The situation of the puncture was about three inches to the right, and one inch below the umbilicus. The immediate result of the withdrawal of the trocar was the escape of an enormous quantity of flatus, followed by fluid feces, producing instant tranquillity, and a decided general improvement in our patient's condition. It was an essential part of our plan that the canula should

be retained in the bowels at least for three days, as by that means the parts were *pinned* together, and extravasation rendered mechanically impossible. This state of parts would also favor the surrounding and isolating of the puncture by lymph, and the limiting of peritoneal inflammation, should such be set up. The operation was unattended by any difficulty or after complication; the system was relieved from the moment of the puncture, not having to rally from the shock of a long and severe operation; nor did any symptoms whatever arise from the simple procedure adopted, except a slight local irritation, due rather to the dressings and apparatus than to the operation itself. For three days the canula was retained in the wound, and a moistened bladder was attached, into which flatus and fecal matter were freely repelled, and removed from time to time. Afterwards a gutta serena tube was inserted into the opening, and closed by a plug. A saline aperient was administered to keep the fecal matter in a semi-fluid state, and the bowels generally emptied themselves spontaneously when the plug was removed. Some difficulty was experienced in fitting the opening with a tube, which should be large enough to retain its position and to discharge the contents, and not too large to pass readily into the bowel. Sponge-tents were found of very great use in dilating the opening, which might have been increased in this manner to any desirable extent. Eventually the patient managed the opening herself with a tent or rolled linen plug well greased. The course of the recovery was two or three times retarded by coughs, febrile attacks, and nervous debility; but these conditions were successively overcome as the summer advanced. She acquired more skill and confidence in managing her tents and bandage, and regulating the condition of the bowels; she left town for the seaside for a few weeks, and returned in good health. She now (thirteen months after operation) is able to walk several miles, and to attend to her household duties; her functions are naturally performed; she is as stout as usual, and is free from local or general uneasiness. She takes a small quantity of Epsom salts every morning, and has a free semi-fluid discharge with much flatus daily. There is a tendency in the opening to close; it is of about the size of the little finger, and might doubtless be much increased if the patient could be prevailed upon to use sponge-tents for a week, and then adopt a permanent tube instead of the linen plug, which she still uses on account of its easy manipulation. There is some permanent enlargement of the abdomen, probably from over-distended bowel, which has lost its tone. No fecal matter has ever passed *per anum*, only a little flatus and inspissated mucus occasionally.

On the spontaneous cure of Psoas Abscess. By M. BOUVIER, Surgeon to the Hôpital des Enfants, at Paris. ('Archiv. Générales de Médecine,' January, 1857.)

The object of this paper is to show that the spontaneous cure of psoas abscess is a more frequent occurrence than is generally supposed, and in that way to encourage surgeons to persevere in the several measures which experience has shown to be useful in promoting that end. A careful examination of the iliac fossa in *all* persons suffering from Pott's disease has convinced M. Bouvier that psoas abscess is often met with when its existence is not suspected, and that it often disappears before attention has been called to it. M. Bouvier has also met with several cases in which large and evident psoas abscesses have been more or less completely absorbed, and he relates four of them in the present paper. Of these cases we select one.

CASE.—Emile G—, æt. 9, admitted into the Hôpital des Enfants, at Paris, December 7th, 1853, with angular curvature of the lumbar spine, psoas abscess, and some other symptoms of less moment. Rest and tonics were prescribed, and under this treatment the general health improved, but the abscess increased until it acquired a very large size. At the end of six months, indeed, it filled the entire right iliac fossa, and extended considerably into the cellular spaces of the thigh, posteriorly as well as anteriorly. Salt bathing, counter-irritation in various forms, and other measures were tried for several months, and the health improved, but the abscess remained at about the same size—sometimes diminishing a little, sometimes increasing. The whole of the year 1854, and the early part of the year 1855, were occupied in these trials. In April, 1855, an attempt was made to open the abscess in the thigh where the pus appeared to be pointing, but the knife did not

enter the sac, and the attempt was not repeated; indeed, it was found that the walls of the abscess were thicker than was supposed, and this discovery led to a renewal of the attempt to procure absorption. From June, 1855, to June 1856, small doses of iodine were given with considerable regularity, and under this treatment, and the occasional application of blisters, the abscess diminished in size, until at last *no trace of it could be discovered*. The patient was discharged, well, on the 30th of June, 1856; indeed, the recovery was perfect, for there was no longer any tenderness over the part of the spine which had been carious, and the power of standing upright and walking freely, was also restored. M. Bouvier had another opportunity of seeing the patient in October, and still there were no traces of the abscess, either in the iliac fossa or in the thigh.

. Such cases as these are not very uncommon, but they are not sufficiently borne in mind. Indeed there is at present in the Westminster Hospital, under Mr. Brooke, a girl, aged seventeen, who has been for many years the subject of angular curvature of the lower part of the lumbar spine, with caries of the bodies of the bones, and a large psoas abscess for the last nine months, which pointed in the thigh. This abscess was punctured. Very large quantities of matter continued to flow for some time, and several undoubted fragments of the bodies of the diseased vertebræ came away. The girl's health began to improve, her strength and flesh to return, and for the last three or four months she has been up and walking about the ward. There is still a little discharge, but not of much moment, and there is every reasonable hope of a permanent spontaneous cure. Her stay in hospital has been about seven months.

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

On the treatment of Ovarian Cysts by injections of Iodine. By M. BOINET.
(*Gaz. Hebd. de Méd. et Chir.*, Nov. 21st, 1856.

In this memoir M. Boinet gives a table of 44 cases which had been treated in this manner by French surgeons during the last nine years, and from this table we may learn several interesting particulars. We may learn, in the first place, that the operation succeeded in 31 out of 45 (there were two cysts in one person) of the cysts operated upon, and that death happened in 9 out of the 14 remaining. Of the fatal cases, the cyst was multilocular in 6, and unilocular in 3; of the failures, the cyst was multilocular in 5.

The age of the patients operated on varied from 15 to 78.

	Cases.	Cures.	Failure.	Deaths.
From 15 to 20	2	1	1	—
	7	5	1	1
	17	16	—	1
	11	6	2	3
	5	2	—	3
	3	1	1	1
	—	—	—	—
	45	31	5	9

The duration of the disease before the operation is not mentioned in 9 cases, and in the remaining 36 it varied from three months to ten years.

The number of simple punctures prior to the injection, is only noticed in 14 cases. In 31 cases these punctures were not performed, or the fact is not mentioned. Prior to the injection the simple punctures were—

In 5 cases	1 puncture.
" 2 "	2 "
" 4 "	4 "
" 2 "	6 "
" 1 "	16 "

The variety of cyst was—

Unilocular	34
Multilocular	11

Among the unilocular cysts, 2 were hydatidiform, 2 complicated with fibrous tumors, 3 purulent, 3 complicated with ascites, and 2 multiple.

The fluid was—

In 23 cases, serous and yellow colored.	
" 9 " thick and gelatinous.	
" 3 " purulent.	
" 3 " clear and limpid as spring water.	
" 3 " chocolate-colored serum.	
" 3 " sanguinolent serum.	
" 1 " pure blood.	

The *state of general health* was more or less unsatisfactory in all. In 28 it was very unsatisfactory.

The *number of punctures and injections* was very considerable. In the 44 patients the punctures were 144, and the iodine injections 139; and in no instance were these punctures and injections attended by any ill results, neither at the time of the operation, nor after it—i. e., during the first week. In one case the patient died on the fifth day, from the effects of peritonitis and purulent absorption; but this was brought about, in M. Boinet's opinion, by the fact that the patient would get up on the day of the operation, and on the day following, to change her linen and arrange her bed.

In 19 instances there was only 1 puncture and 1 injection; and in 16 instances the patient was cured, although in several of them the cyst contained a large quantity of fluid—more than 20 litres; and this fact may, therefore, be said to show that it is not necessary, as M. Demarquay proposes, to diminish the size of the cyst by repeated punctures before having recourse to the iodine injection.

In 7 instances the punctures and injections were performed twice, and in 5 the result was successful. In 1 case the patient died from the effects of purulent absorption, and in the account it appears that she had twice withdrawn a canula which had been left in the wound; in the other unsuccessful case, the tumor was multilocular.

In 6 instances the punctures and injections were performed twice, and the results were 4 cures, 1 failure (the cyst was multilocular), and 1 death.

In 2 instances the punctures and injections were performed 4 times—in 1 successfully, in the other the patient dying. In 1 instance there were 4 punctures and 3 injections, and the patient died; in another instance there were 4 punctures and 2 injections, and the patient was cured.

In 4 instances there were 6 punctures and 6 injections, and the results were 2 cures, 2 failures, and 2 deaths—the 2 cysts being multilocular in both fatal cases.

In 2 instances there were 17 punctures and 17 injections. In one of the patients there were 2 unilocular cysts, in the other the cyst was multilocular. The first patient was cured; the other died when she was nearly well, having taken cold in consequence of having to get up to open a door.

In two instances there were 9 punctures and 9 injections, and in both (the cysts were multilocular) the patients died.

In 45 cysts, that is to say, there were 31 cures and 14 failures, and among the failures 9 deaths. Of these 9 deaths, 6 were doomed to certain and speedy death, and the iodine injections may be said to have prolonged life rather than to have shortened it. The cysts in these cases, moreover, were all multilocular, and filled with a thick and unsatisfactory fluid. The 3 other cases appear to have miscarried in consequence of some imprudence on the part of the patient. In one, the patient got up and changed her linen on the day after the operation; in the second, the patient believed herself to be well, and, impatient to leave the hospital, she withdrew the canula from the opening; in the third, the patient was exposed to severe cold two days after the seventeenth injection, in consequence of having to get out of bed to open a door. Indeed, in no instance could death be attributed to the punctures or to the injections, and in the majority life would seem to have been prolonged, and existence rendered more supportable by the operation.

The patients in whom the operation failed were 5 in number, and they all had multilocular cysts, complicated either with tumors or ascites. In 3 the injection was repeated several times without producing the slightest ill consequences; in the other 2 the operation was only performed once. In the whole number, the patients were undoubtedly relieved by the operation, and of this number 3 are still alive. Of the two who are dead, 1 lived eight months after the last injection, which was the fourth within five months; and the other more than twenty months after the third injection.

Hence we may conclude from the history of these 44 cases—

1. That the operation of injecting iodine into these ovarian cysts was unattended by any kind of danger, and that equally whether the cysts were simple or complicated, unilocular or multilocular.

2. That the operation has frequently brought about a radical cure (two in three),

and that it has always produced some remarkable amelioration even where a cure was not to be hoped for.

3. That simple unilocular serous cysts, even when very voluminous, have usually been cured by a simple operation.

4. That a great number of punctures and injections have been practised upon the same cysts without any inconvenience whatever.

5. That it is desirable to operate at an early period before the cyst has become multilocular, and before the general health has suffered; that it is expedient to operate as soon as the cyst can be detected, if the cyst is making any progress; and that the operation ought to be repeated as soon as the liquid begins to reaccumulate.

6. That the canula ought to be retained in exceptional cases, and where the operation has frequently been repeated without success.

On Cysts of the Ovary. By MM. CAZEAU HUGUIER, and others. ('*Rév. Thér. du Midi.*' Feb. 15th, 1857; and '*Dublin Quart. Journ. of Med. Science.*' May, 1857.)

The following is a summary, deduced in the form of propositions by M. Saurel, from the observations of the several speakers who have taken part in the discussion at the Academy of Medicine, which has so long agitated the profession in France:

1. Cysts of the ovary constitute a most serious disease, and one which has a strong tendency to a fatal termination (Cazeau and Huguier).

2. These cysts have a variable duration, which is usually four (Cazeau); six, ten, or twelve years (Velpeau).

3. It is an error to suppose that, in the majority of cases, life is prolonged to an advanced age: the younger the patient is, the more speedily does she sink under the disease (Huguier).

4. There are ovarian dropsies which are absolutely incurable, and which have neither curative nor palliative treatment; these are the areolar cysts, the vesicular cysts, and the multilocular cysts with numerous non-communicating cells (Cruveilhier).

5. In certain cases ovarian cysts may get well spontaneously, or may be removed by certain therapeutic agents (Velpeau).

6. Their cure may take place as a result of rupture, though this accident most frequently proves fatal (Velpeau).

7. The so-called palliative puncture of ovarian cysts is not a dangerous operation. It may, in certain cases, which are, however, very exceptional, lead to permanent cure; but it is attended with the serious inconvenience of producing or hastening exhaustion of the system, by subtracting a considerable quantity of fluid (Velpeau).

8. Puncture, followed by the injection of an ioduretted solution is, in the present state of our knowledge, the most certain and least dangerous means of curing this hitherto incurable disease (Cazeau).

9. Immovable canulas and sounds ought to be banished from the treatment of ovarian cysts, except under very rare circumstances; their employment being an almost constant cause of suppuration.

10. The proceeding to which it is in almost every case advisable to have recourse is puncture, followed by ioduretted injection, with occlusion of the opening.

11. Unilocular cysts, without organic alteration of their walls, containing a serous, sero-sanguineous, or albuminous fluid; cysts which have originated in an extra-uterine pregnancy; and purulent cysts, are those most amenable to treatment (Huguier).

12. The discussion having proved that puncture followed by ioduretted injection is not more dangerous than simple puncture, it will be right to operate early, in order to have the best possible chance of success (Velpeau).

13. The proper time to operate is when the cyst, not having yet acquired a large size, is beginning to cause suffering to the patient, or to exercise an injurious reaction upon the functions.

14. The great danger in the curative, as well as in the palliative, treatment is purulent and gangrenous inflammation of the cyst. The choice of the proceeding to be adopted should be directed by this indication (Cruveilhier).

15. Extirpation of the ovaries is a fearful operation, and ought to be proscribed, even were the cures which have been announced real (Velpéau).

The Change of Life in Health and Disease; a practical treatise on the nervous and other affections incidental to women at the decline of life. By EDWARD JOHN TILT, M.D., Physician to the Farringdon General Dispensary and Lying-in Charity. (Second edition, 8vo. London, Churchill, 1857, pp. 307.)

This volume illustrates the medical history of the period comprised between the fortieth and fifty-fifth year, and, in addition to other data, it embodies the tabulated estimates of the symptoms and diseases observed among 500 women who were at the change of life, or who had passed it. Its object is to establish by various arguments, and mainly by those which are derived from personal experience—

1. That the period of life comprised between the fortieth and fiftieth years, commonly called the change of life, is eminently critical; that while in most women the critical phenomena with which this epoch abounds are instrumental in curing the complaints and strengthening the constitution, there are a certain number of women in whom these critical phenomena give rise to numerous and sometimes to fatal diseases.

2. That a more accurate physiology of the change of life can alone explain its pathology. That the date of cessation; its diagnosis from some of the affections to which women are liable at the decline of life; the various compensating agencies by which health is then maintained in the absence of a thirty years' habitual sanguineous flow, are points of deep interest, and the last explains how nature remodels the female frame so as to endow it with greater longevity, and with comparatively greater immunity from disease.

3. That instead of adopting the vague or hazardous notions generally put forth respecting diseases of the change of life, it is better to seek a knowledge of the real morbid liabilities of this epoch, from the percentage of various diseases, deduced from a large number of well-tabulated cases.

4. That the natural history of the change of life can alone indicate the best modes of treatment for the complaints incidental to this period, and that, notwithstanding the interference of fashion with medical practice, it is still safe and desirable to imitate the critical efforts of nature at this crisis, by bleeding, by giving purgatives and sudorifics.

5. That for the preservation of the health of women at the change of life, and for the possibility of deriving full benefit from the beautifully adapted critical phenomena then progressing, it is necessary that women should adhere to a judiciously laid down code of hygiene.

6. That the first part of the period under consideration is one of turbulent activity for the reproductive organs, giving rise to numerous complaints, comparatively few of which come under medical treatment, though many are patiently borne, until, by their reaction on the nervous system, they help to produce many forms of nervous disorder.

7. That the digestive organs, particularly the biliary apparatus, are very frequently affected at this period.

8. That the affections of the skin, noticed at the change of life, are rather tedious than severe.

9. That well-localized nervous affections sometimes occur at this critical epoch.

10. That there are ganglionic nervous affections, which should be carefully distinguished from the cerebral and the spinal nervous affections, with which they are now confounded, because they often coincide and alternate with them; that these ganglionic nervous affections most frequently occur in women, at all the critical epochs of the reproductive function, and are very general at the change of life.

11. That there are several well-determined modes of cerebro-spinal disturbance to which the term hysteria is indiscriminately applied, and that, unless clearly defined, that term is a bar to the progress of mental pathology, by lending to ignorance a scientific cloak. That cerebral affections are so common at the change of

life, that few, if any women escape suffering from the milder forms of cerebro-spinal disturbance, and that these, if neglected, sometimes merge into the many varieties of insanity, the worst cases being, however, peculiarly amenable to treatment, of which the local application of sedatives is an essential part.

12. That women, at the change of life, are frequently afflicted with cancer, gout, and rheumatism.

There are few points in the several subjects touched upon in which the reader may not gain some valuable information, and where there are so many to choose from we scarcely know where to turn for illustration. We would, however, especially direct attention to the chapter in which Dr. Tilt attempts to trace the boundary line between cerebral and ganglionic affections, and we do this in order to express our sympathy with the attempt. No doubt the physiology of the ganglionic system is yet in its infancy, and the pathology is still in great measure a matter of conjecture; but we agree with Dr. Tilt in thinking that the experiments of M. Claude Bernard and others have furnished us with reasons for supposing that the cause of certain nervous symptoms which are usually referred to the cerebro-spinal system may be found in certain errors in the ganglionic system. Epigastric faintness and sinking, epigastric pain or anomalous symptoms, fainting or leipothymia, prolonged and intense debility, monthly depression of strength, chloro-spanæmia, palpitations, aortic pulsations, hysterical asthma, &c.—symptoms which are especially prone to happen about the change of life—are all, in Dr. Tilt's opinion, to be referred to certain errors in the ganglionic system, and certainly they would seem to be more easily accounted for upon this hypothesis than any other.

Case of Uterine Retroversion, in which the reduction was facilitated by placing the patient in an inverted position. By M. GODEFROY, Professor of Midwifery at Rennes. ('Gaz. Méd. de Paris,' January 24th, 1857.)

The advantages of this plan are self-evident, for not only is the uterus relieved from the pressure of the overlying viscera, but the very position of the patient prevents her in great measure from "bearing down," and in that way counteracting the action which is necessary to restore her uterus to its proper position. M. Godefroy refers, moreover, to three other cases in which he had, some years ago, tried this plan with success.

CASE.—October 8th, 1855.—Madame Noel, tall, and having a capacious pelvis, the mother of several children, and now in the four and half month of her pregnancy, fell while descending a pair of stairs, and received a severe shock upon her seat. Immediately afterwards she suffered from "bearing down" pains, and from difficulty in emptying the bladder and rectum. For six days after the accident the symptoms were not sufficiently urgent to prevent her from discharging her ordinary duties; but on the seventh day the retention of urine and feces became complete, and she was obliged to send for help.

15th.—Believing herself to be threatened with abortion, she sent for a sage-femme, who found the uterus to be completely retroverted, so that its fundus rested on the coccyx. The bladder, also, was distended to an extreme degree. Catheterism was attempted, but the ureter was so compressed under the neck of the womb, that the instrument would not pass. The patient was then placed upon her hands and knees, and having placed herself behind, the sage-femme introduced three fingers into the rectum, and attempted to replace the uterus, but vainly.

When M. Godefroy arrived, the patient was found to be in a state of extreme agitation, and every moment she was off the bed in order to repeat her ineffectual attempts to relieve the bladder and rectum. On examination the body of the uterus was found to fill the entire pelvic cavity, the neck being firmly applied to the pubis, and the fundus resting upon the coccyx. So wedged was the uterus in this position, that M. Godefroy did not think it advisable to renew the attempts at catheterism; and, therefore, without loss of time he proceeded to make the patient hang over the edge of the bed, in such a manner, that her head and shoulders downwards, and her pelvis upwards, the lower limbs were upon the bed, and the hands and forearms upon the floor. Then, placing assistants so as to prevent the patient from slipping from the bed, and having waited a few minutes, M. Godefroy introduced four of his left fingers, previously oiled, into the rectum, and pressed

scapula; as much, indeed, as is usually liable to disease that has originated in the shoulder-joint. The instrument that will be found most useful in taking away the carious bone, is a pair of strong cutting pliers, the blades of which are set at an obtuse angle with the handles. They must be introduced with the finger as a guide, and piece after piece cut away till the whole of the disease is fairly removed, for on this depends the success of the operation. The wound should then be cleared of clots, and several sutures introduced to keep the flaps in apposition. The arm must be placed against the side, and the elbow well supported so as to prevent any movement of the part.

There are several advantages gained from this proceeding: the first incision allows a free examination of the joint, and enables the operator to determine how much of the bone it is necessary to remove. The second divides only the posterior half of the deltoid, and while it leaves the arm still supported by the anterior part, it affords ample room for the excision of the head of the humerus, and of the *surface* of the glenoid cavity. Again, by extending the same incision across the lower part of the body of the scapula, as much of that bone may be removed as is found desirable. If, on the other hand, amputation appears essential, the incisions first practised require only to be extended across the front and back of the arm, and very excellent flaps are formed.

As regards the after treatment of excision, it is of the greatest importance to prevent the least movement of the arm. The part should be treated as if it were a compound fracture. Let the surgeon bear in mind that the chief danger is in the exhausting and very profuse discharge that invariably follows an operation of this kind; and let him remember that any movement of the bones in the interior of the wound will increase the irritation, and render the suppuration more profuse. In dressing the wound, he must not be tempted to raise the arm or lift up the elbow, with the idea of thereby facilitating the escape of matter. If there is any lodgment or hinderance to its escape, it is far better to make dependent openings.

When the shoulder is dressed, if the patient is sitting up, an assistant should carefully steady and support the arm during the whole time. In addition to the ordinary sling, under the arm and round the joint of the elbow, Mr. Bickersteth has found great comfort and support afforded by a long broad strap of strong plaster fastened under the elbow, and brought up, first in front along the upper arm, and then over the top of the shoulder. This may be allowed to remain on as long as it will adhere. It affords support to the arm during the time the sling and bandages are being changed, and it serves in some measure to fix and steady the scapula. When the patient is in a recumbent position, small pillows should be placed under the upper part of the arm, as otherwise it is liable to get displaced. After the sutures have been removed, strips of adhesive plaster may be laid over the lines of incision; and when union and a sufficient degree of consolidation have taken place, the supports may be removed, and passive motion of the arm commenced.

So far from making it a practice to administer regular and periodic doses of opium after a capital operation, Mr. Bickersteth has seldom found it necessary to order even a single draught; on the contrary, he is satisfied that as a general rule, when an operation is undertaken for long-standing disease, the patient sooner recovers from the shock, and sooner regains appetite and power of digestion when opium is not given. The pain that follows any severe operation lasts only for a few hours, and if this period can be passed without the administration of opium, there will be less thirst, a cleaner tongue, and a condition more calm and comfortable on the following days.

Mr. Bickersteth relates three cases in illustration. In two of these the glenoid cavity of the scapula was extensively diseased; and in one a part of the body of the bone, the inferior costa, together with the entire neck, required such extensive ablation, that the coracoid process was detached from its base; and yet, even after this serious mutilation, the case progressed most satisfactorily. Twenty-three days after the operation, the wound had healed, the discharge almost ceased, and the arm shortly recovered such power, that the patient was able to wash, carry considerable weights, and attend to all her household duties.

end of the head will frequently pass first to the floor of the pelvis, and then come forward to the arch of the pubes.

16. That Nügele, on his own showing, had never seen a genuine case of true *fronto-anterior* position, incredible though it may seem; at any rate, such a case as is described by nearly all writers, and as is met with continually in practice. He decidedly ignores all such cases.

17. That Nügele is quite as wrong in maintaining that all first positions are originally *occipito-cotyloid*, as that all second positions are originally *bregmato-cotyloid*; *bregmato-cotyloid* positions, in the former class of cases, being common enough, and having been overlooked through the method of examination.

18. But that most of the *bregmato-cotyloid* positions met with are merely instances of a kind of *deceptio tactus*.

19. For it is only necessary to place the patient on her other side, and to use the other hand in examining, in order to be convinced that the first and second positions of the vertex are the converse of each other in *every respect*.

20. And that, although there may be quite sufficient in the patient's position to account for this *deceptio*, we may be justified in taking into consideration, also, the deceptive impression conveyed to the finger, when it is passed *blindfold* from one point to another of a globular surface along a line ordinarily looked upon as a straight one, lying over that *globular surface*.

21. That it is no wonder that disputes and discrepancies should have arisen among authors, when we find one set speaking of presentations of the "vertex," and meaning presentations of *any part of the whole cranium*; while another set, like Nügele, speak of "*cranial positions*," meaning positions of the *vertex* exclusively.

22. And finally, that the dispute between Nügele, and those whom he so utterly condemns as guilty of *ignorance* ('Unkunde der Art und Weise,' &c.), is something like the quarrel between the two knights about the shield which was gold on one side, and silver on the other.

These are points which will have to be subjected to further experience, and a final decision in many of them may be deferred for some time; but of this there can be no doubt even now, and that is, that Dr. West has furnished evidence in favor of his opinions, of which it is not easy to overrate the importance.

On Sugar in the Urine of Women during Nursing and occasionally during Pregnancy. By Dr. HIPOLYTE BLOT. ('Bull. Gén. de Ther.,' and 'Dublin Hospital Gazette,' November 15th, 1856.)

It appears from these remarks that sugar is a normal constituent in the urine of all women in childbed, of all women while nursing, and of a certain number even during pregnancy. At any rate Dr. Blot has found that the urine under these circumstances (and M. Rayer and M. Claude Bernard appear to have been satisfied with the evidence) has presented all the characteristics belonging to urine containing sugar,—reducing, that is to say, the copper in the cupro-potassic test of Fehling; turning brown when boiled with solution of caustic potass or lime; yielding alcohol and carbonic acid on fermentation; and causing polarized light to deviate to the right.

"In all pregnant women (forty-five times out of forty-five women examined)," says Dr. Blot, "it is at the moment the milk secretion commences that the sugar makes its appearance in sufficient quantity to be detected. In many women it appears only at this epoch; in some it appears sooner, but usually in very small quantity.

"If the secretion of milk continues, sugar continues to be passed in the urine with certain daily variations to be afterwards explained.

"When the secretion of milk is abundant, the proportion of sugar is, in general, great; when the milk is scanty, the urine contains little sugar; thus an examination of the urine may serve, in some degree, to indicate the value of a nurse. If the milk secretion is diminished or dried up from any cause whatever, but especially by the development of any morbid state, the sugar diminishes, and completely disappears; if the health improves, and the milk returns, the sugar reappears in the urine. Lastly the urine continues to contain sugar so long as the secretion of milk

persists. I have found a very appreciable quantity in a woman who continued to give milk for twenty-two months. It is unnecessary to say that such persons present no symptoms of diabetes; on the contrary, that in general the better the health, the more rich in sugar is the urine.

"When lactation ceases, the sugar disappears from the urine; quickly in women who do not nurse, more slowly in those who having nursed begin to wean their children. In the latter, the disappearance of the sugar offers some peculiarities—thus, I have happened to find it one day and not the next, and yet detect it again on the third; but it constantly occurs that the amount of sugar is reduced to a very small proportion from the time when the tumefaction of the mammary fluid consequent on weaning has subsided. From these considerations it seems impossible not to conclude that there is a close connection between this physiological glucosuria and the secretion of milk. I have already stated that the quantity of sugar varies in different individuals, and at different periods of lactation. I now add, that it is ordinarily present in much smaller quantities than in diabetes. The quantity which I have obtained from different specimens varied from 1, 2, even up to 12 parts in 1000.

"Among women during pregnancy, sugar was detected in the urine of about one-half of those observed; I believe, though I cannot positively affirm the fact, that this peculiarity was met with when the sympathetic phenomena of pregnancy, as regards the *mammæ*, were very well developed; it was wanting, on the contrary, when the *mammæ* remained, so to speak, indifferent to what was going on in the uterus.

"This passing of sugar in the urine during lactation, so easily recognized in women, I naturally concluded took place in other *mammalia*, and, indeed, I have observed the phenomena in the cow. In short in nine observations made on animals of this sort, I have detected the presence of sugar in nine, that is, in all observed."

IV.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.

A treatise on Therapeutics and Pharmacology; or, Materia Medica. By GEORGE B. WOOD, M.D., President of the College of Physicians of Philadelphia, Professor of Medicine in the University of Pennsylvania, Senior Physician to the Pennsylvania Hospital. (In 2 vols. 8vo. Philadelphia, Lippincott; and London, Trübner, 1856, pp. 840 and 901.)

For a period of about thirty years Dr. Wood has been actively engaged in teaching materia medica and therapeutics, first as a private lecturer and afterwards as professor in the Philadelphia College of Pharmacy and the University of Pennsylvania; for twenty years he has held the office of physician to the Pennsylvania Hospital; and, in addition to these high qualifications for a writer upon materia medica and therapeutics, he has that of being one of the authors of the United States Dispensatory. We, therefore, expect a work of a high class from such a man, and in this expectation we are not disappointed.

It is, in our opinion, a great recommendation of Dr. Wood's treatise that the subject in it is treated upon a physiological or therapeutical plan, and not upon the alphabetical or natural history plan. It is, no doubt, a very difficult matter to invent a plan which shall be free from serious objections, and in the present state of therapeutical and physiological knowledge such an invention is manifestly unattainable; but we prefer an imperfect plan to none, or to the natural history arrangement, which, so far as therapeutics are concerned, is next to none. Dr. Wood's plan, however, has much to recommend it.

Remedies, according to it, are divided primarily into those which operate upon the system, and those upon extraneous bodies accidentally contained within the system. The former division embraces the great body of remedies; the latter includes only two small classes, which are retained for the sake of practical convenience; as it is desirable that the physician should have the medicines belonging to them associated together in his memory.

1. *Systemic Remedies.*

Some remedies extend their action throughout the whole living system; others, operating upon one or more of those functions, as the circulatory and nervous, which pervade the body, are apparently felt in all parts of it, though not strictly universal in their direct influence. All these may be denominated *general remedies*. Another large division act specially on some one part or organ, or, if they affect the general system, do so indirectly or secondarily. These may be called *local remedies*; and thus we have the basis of the first subdivision.

A. *General Remedies.*

The general remedies are necessarily either *stimulant*, *sedative*, or *alterative*; that is, either elevate, depress, or alter the systemic actions. These three sets constitute the second subdivision.

I. *General stimulants.*—If the operation of stimulant substances be closely observed, it will be noticed that, while some are slow, moderate, and lasting, others

are, on the contrary, quick, energetic, and proportionably brief in their action; though the two sets run together by almost insensible gradations. This difference of operation was made, by Dr. Murray, of Edinburgh, the basis of a division of the general stimulants into two distinct sets, which he named respectively *permanent* and *diffusible stimulants*. Though these terms are neither of them very accurately expressive of the distinctive characters of the two divisions; yet it may not be easy to find better, and it is advisable not to adopt new names unless upon some real ground of preference. Dr. Wood has, therefore, admitted this division with the nomenclature.

A. Permanent stimulants.—There is a very striking distinction between the permanent stimulants; one section confining their direct influence to the vital function of organic contractility, the other operating upon the vital functions generally. The first division is very appropriately denominated *astringents*, the second less appropriately *tonics*. They constitute two of the ultimate classes of remedies.

1. *Astringents* are medicines which produce contraction of the living tissues.

2. *Tonics* are characterized by their general stimulating influence over the functions, operating slowly, moderately, and somewhat durably, either directly through the circulation, or secondarily through the digestive function.

B. Diffusible stimulants.—Some of these appear to be universal, such as heat and electricity; but the greater portion, and perhaps all which come strictly under the denomination of medicines, exhibit a special tendency to one or the other of the two great pervading systems or apparatuses of the body, the circulatory, namely, and the nervous. As those which have a tendency to the circulation operate directly rather upon the arterial than the venous side of it, Dr. Wood names them *arterial stimulants*. Those acting specially on the nervous system may be called *cerebro-spinal stimulants*.

1. *Arterial stimulants* are scarcely susceptible of further profitable subdivision, and therefore constitute one of the ultimate classes. They are characterized especially by their property of increasing the action of the heart and arteries, and, along with this effect, and probably consequent upon it, of causing an elevation of the animal temperature.

2. *Cerebro-spinal stimulants.*—Dr. Wood does not wish, by the use of this term, to intimate that the remedies so-called act exclusively on the brain and spinal marrow; they may possibly, and probably do, in some instances, affect the ganglionic system, and, indeed, the whole nervous substance wherever they may meet with it. There is a marked difference between the members of this subdivision. Whilst some appear to operate equally upon the whole nervous system of relation, showing no special influence over the proper cerebral functions; others act with great energy on the brain, as evinced by their power of deranging sensation, voluntary motion, consciousness, and the various intellectual and emotional functions. The former he denominates *nervous stimulants*, the latter *cerebral stimulants*. Besides these two sets of cerebro-spinal stimulants, there is at least one medicine which acts especially and powerfully on the spinal marrow, and for which a distinct class may be formed under the name of *spinal stimulants*. These three are all ultimate classes.

a. Nervous stimulants, characterized by a special but equable influence over the nervous system, generally stimulate in some degree, though not necessarily, the circulation also. They are sometimes called *nervines*, and not unfrequently *antispasmodics*.

b. Cerebral stimulants, with more or less influence on the circulation, and sometimes a powerful influence, are peculiarly characterized by their control over the special cerebral functions. They are equivalent to the *stimulant narcotics* of other writers, and embrace some of the most energetic articles of the materia medica, such as alcohol and opium.

c. Spinal stimulants act specially, so far as their operation is known, on the reflex motor function.

II. General sedatives.—These are remedies which directly depress the vital functions. While a few operate universally, as cold and water, most of them, like the corresponding stimulants, act especially or exclusively on one of the two great systems, the circulatory, namely, and the nervous; some prominently affecting the

former, and therefore denominated *arterial sedatives*, others the latter, and named *cerebro-nervous sedatives*.

1. *Arterial sedatives* constitute one of the ultimate classes. They act mainly, if not exclusively, in their primary influence, upon the heart and arteries, without any direct effect on the cerebro-spinal functions. As, among the results of the circulatory depression, is a reduction also of the temperature, they are frequently called *refrigerants*.

2. *Cerebro-spinal sedatives*.—These may be advantageously divided, like the corresponding subdivision of stimulants, into the *nervous* and *cerebral*, which form ultimate classes.

a. *Nervous sedatives* are such as reduce generally the nervous functions, without any special reference to the brain. They uniformly, either by a conjoint primary action, or secondarily through their influence on the nerves, reduce the force of the circulation also. They are usually designated as *sedative narcotics*.

b. *Cerebral sedatives* are remedies which, while they depress the circulation either primarily or secondarily, exert a special and marked influence, of a sedative character, on the cerebral functions. Like the preceding class, they would rank with the medicines usually known as sedative narcotics.

III. *General alteratives*.—These are remedies which insensibly change the functions or organization, without any necessary elevation or depression of the vital actions, and the influence of which is mainly recognized by their effects in disease. They may be stimulant or sedative, and they may produce various local effects which would rank them in other classes; but it is not through these that the special curative effects are produced, which entitle them to the name by which they are distinguished. Knowing so little of their mode of action, we are not possessed of grounds for subdividing them, and they therefore rank with the ultimate classes.

B. Local Remedies.

Dr. Wood does not include in this class, in reference at least to their peculiar and characteristic properties, the general remedies which may sometimes be made to act locally by confining them to a particular part; as opium, for example, and belladonna, both of which are sometimes applied to the surface, with the view of affecting exclusively the neighborhood of their application. The division includes only remedies which either have a special direction to some particular organ or part of the body, to whatever portion of it they may be applied, or which, if possessed of general powers, are employed locally for some effect different from the general; as when potassa, for instance, is used as an escharotic, cantharides for blistering, and mustard as a rubefacient, which effects are not incident to their internal use as medicines.

With a very few exceptions, all the local remedies are more or less stimulant; and the possession, therefore, of this property, or that of depression, does not constitute a sufficient ground of distinction between them. Consequently, some other basis of classification must be sought for; and it has appeared to me that they might be most conveniently arranged, according as they are employed to affect the functions, or to change the organization, or to act merely as mechanical agents.

1. *Local remedies acting on the functions*.—The subdivisions of these are all ultimate classes of medicines, and are as follows:

1. *Emetics*, which operate on the stomach, producing vomiting;
2. *Cathartics*, which operate on the bowels, producing their evacuation downward;
3. *Diuretics*, which act on the kidneys, increasing the secretion of urine;
4. *Diaphoretics*, which act on the skin, causing perspiration;
5. *Expectorants*, which act on the lungs, causing expectoration;
6. *Cholagogues*, which act on the liver, increasing the secretion of bile;
7. *Emmenagogues*, which act on the uterus, exciting, increasing, or restoring the menses;
8. *Uterine motor-stimulants*, which favor uterine contraction;

9. *Sialagogues*, which increase the secretion of saliva ; and
 10. *Errhines* or *sternutatories*, which operate on the nostrils, causing an increased secretion, and sneezing.

II. *Local remedies affecting the organization*.—The subdivisions of these are also ultimate classes, and are as follows :

1. *Rubefacients*, inflaming the skin ;
2. *Epispastics*, producing blisters ; and
3. *Escharotics*, destroying the life of the part, and producing a slough.

III. *Local remedies acting mechanically*.—These include, besides the various measures enumerated under the head of "Mechanical Influence," the following classes of medicines :

1. *Demulcents*, bland viscid liquids, which cover surfaces and protect them from irritation, or mingled with acrid substances obtund their acrimony ;
2. *Emollients*, which soften and relax ;
3. *Diluents*, which dilute the fluids of the body ; and
4. *Protectives*, which operate by covering the surface, and preventing the contact of the air.

II. *Non-systemic Remedies.*

These are remedies acting on bodies foreign to the system, but within it. They embrace the two ultimate classes of

1. *Antacids*, which neutralize acid in the stomach or elsewhere in the system ; and
2. *Anthelmintics*, which favor the expulsion of worms from the bowels.

Dr. Wood has divided his treatise into two parts : in the first, he considers the questions of general therapeutics and pharmacology, namely, the operation, the effects, and the application of medicines, and after this he proceeds to explain the classification which has just been given ; in the second part he treats of the various questions belonging to special therapeutics and pharmacology, according to this classification. And reviewing the whole we may say that we find everywhere abundant evidence of patient investigation and sound judgment.

On the Composition of Food, and how it is Adulterated, with practical Directions for its Analysis. By W. MARCET, M.D., F.C.S., Licentiate of the Royal College of Physicians, Assistant-Physician and Lecturer on Physiological and Pathological Chemistry to the Westminster Hospital, &c. (London, John Churchill, 1856.)

The subject is divided by our author into three parts, comprising the vegetable, animal, and mineral kinds of food, to which are appended the various means for its preservation. The solid vegetable food includes the farinaceous and saccharine substances, as the different species of flour, sugar, and colored articles of confectionery. The spices which are here noticed embrace black and white pepper, cayenne pepper, mustard, ginger, turmeric, cinnamon, cassia, nutmeg, mace, cloves, allspice, mixed spices, and curry powder.

Fluid vegetable food is divided into—1. Infusions of various substances, as tea and coffee. 2. Fermented beverages, which are wine, beer, spirits, and vinegar.

The animal food includes meat among the solids ; and the fluid comprises milk, cream, &c. The mineral varieties embrace common salt, chloride of sodium, and water.

The preservation of food is accomplished by means of cold, exclusion of air, drying, salting, with sugar and vinegar.

Such is the manner in which Dr. Marcet has arranged the materials placed at his command, and we shall now present to our readers some of the most striking features that evidently present themselves to our notice.

When describing the methods for the analysis of flours, the author recommends a process somewhat similar to that employed for the analysis of blood, the starch being determined in flour not unlike the globules in blood.

The account of the method in question is as follows :

"Having convinced himself of the presence or absence of the normal constituents of the flour under examination, the analyst is to continue his investigation with regard to the *quantitative* composition of the meal; he now requires a balance, but a very delicate instrument is *not* absolutely necessary. The process to be followed is much the same as that recommended for the *qualitative analysis*; a weighed sample of the flour, say about thirty grains, is dried in the water-bath, and reweighed, the difference showing the quantity of water present. The same sample of flour, or another weighed quantity, if preferred, is now tied up in calico, and expressed under distilled water, with the thumb and index finger, until it does not yield any more starch. This operation must be very carefully performed, lest any of the fluid should be lost; it will be found necessary to wash the flour with small successive quantities of pure water, collecting the *whole* fluid into the same vessel. This part of the analysis will last about two hours; when finished, the analyst may throw a little pure water on his fingers with a pipette, and add this fluid to the main solution. The string binding the calico bag being now unfastened, the *gluten* will be found comparatively pure, and by scraping the cloth carefully with a blunt knife, it may be conveyed to a watch-glass, to be dried on the water-bath and weighed.

"The weight of *gluten* or *fibrin* obtained by this method is rather below the true estimate; the result would be somewhat more accurate by weighing the dried calico without and with the dried fibrin, and calculating the difference between the two weights, care being taken to wash the calico thoroughly before using it.

"The *starch* is determined as follows: Ascertain the weight of the fluid obtained by the above process, and allow it to stand undisturbed for some hours in a beaker covered with a glass plate, to enable the starch to subside; then, let a certain amount of the clear liquid be decanted in a weighed capsule, and weigh the capsule again with the fluid; it is next evaporated to dryness on a water-bath, the residue obtained thoroughly dried and then weighed, the quantity of water being thus determined. Whilst this operation is proceeding, the analyst will evaporate also to dryness the remainder of the fluid containing the starch, whose weight has already been ascertained, and the residue, when dry, is also to be weighed. The amount of the starch may be calculated by the proportion. The weight which the clear fluid lost by evaporation is to that of the solid residue it contained as the weight of the water lost by evaporation of both fluids is to x , or the weight of the whole residue soluble in water; by calculating this proportion, and subtracting the result from the sum of the weight of both residues, the *amount of starch* will be obtained. I have employed, repeatedly, this method, and believe it to give correct results."

Independently of giving a series of minute directions for determining by chemical and microscopical operations, the various organic and inorganic substances entering into the composition of flour and its adulterations, the author has drawn up the following table, for the purpose of aiding the analyst in his examination of flour.

With regard to the impurities of cane sugar, Dr. Marcet classifies them in accordance with the methods he employs for their detection, thus:

"1. The *mechanical impurities*, or those which do not dissolve in a solution of sugar, and can be seen with the microscope, as fragments of cane sugar, blood, an *animalcule peculiar to sugar*, fungi, woody fibres, starch globules, sporules of fungi, carbonate of lime, and sand.

"2. *Chemical impurities*, or those dissolving in a solution of sugar, and in this form escaping the scrutiny of the microscope, which are grape sugar or glucose, and vegetable albumen."

FLOUR kneaded in water and strained through a cloth yields—	Gluten, Nature determined by drawing into threads. A Solution, containing { Albumen, precipitated or coagulated by boiling. Sugar. Gives an orange-colored precipitate with sulphate of copper and potash. Gum or Dextrine, transformed into sugar by boiling with dilute sulphuric acid. }	Starch, microscopical examination of, effects the detection of the following adulterations: { Potato Starch, Barley " Rye " Oat " Indian } " Corn } " Rice " Other leguminous Seeds. }	A Deposit, submitted to microscopical examination for the detection of	Other adulterations, indicated by the microscope and chemical reagents.	{ Carbonate of Magnesia, Carbonate of Lime, Bone-dust, Sulphate of Lime, Sand, Clay, }	{ Microscopical examination—Small amorphous specks. Chemical examination—Dissolved by the addition of dilute hydrochloric acid, with the formation of small bubbles, and precipitated crystallized by phosphate of soda and ammonia. Microscopical examination—Small amorphous specks. Chemical examination—Dissolved by the addition of dilute hydrochloric acid, with the formation of small bubbles, and precipitated by ammonia and oxalate of ammonia. Microscopical examination—An organized structure. Chemical examination—Not entirely soluble in dilute hydrochloric acid. Microscopical examination—Small amorphous particles. Chemical examination—Not entirely soluble in dilute hydrochloric acid. The ashes of the flour leave a black stain on silver when burnt in blowpipe flame with carbonate of soda and borax. Microscopical examination—Large amorphous particles, of an angular form. Chemical examination—Insoluble in hydrochloric acid; an opaque bead when ashes of flour are fused in blowpipe flame with microcosmic salt. Microscopical examination—Amorphous particles. Chemical examination—A blue color produced when ashes are treated with nitrate of cobalt and fused with blowpipe. }
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In the following table the author has succinctly explained the most convenient methods for the examination of sugars.

1. Mechanical impurities.	1. <i>Fragments of Sugar-cane.</i>	<i>Microscopical examination</i> —Cells and bundles of woody fibres. <i>Chemical examination</i> —(Not required). <i>Microscopical examination</i> —Small round globules, of a yellowish color.
	2. <i>Blood.</i>	<i>Chemical examination</i> —A scum or coagulum appears when the solution is boiled. It is very apt to turn acid when left in a warm place. <i>Microscopical examination</i> —The sugar insect, or <i>Acarus sacchari</i> .
	3. <i>Animalcules.</i>	<i>Chemical examination</i> —Ammonia is evolved from the presence of nitrogen when the deposit is heated with lime. No coagulum on boiling the solution, unless albumen be also present.
	4. <i>Woody Fibres (accidental).</i>	<i>Microscopical examination</i> —Fibres (of the <i>fir</i>) exhibiting externally a number of small rings or circles. <i>Chemical examination</i> —Transformed into grape sugar when boiled with dilute sulphuric acid.
	5. <i>Starch Globules.</i>	(See "Flour and its Adulterations.")
	6. <i>Sporules of Fungi.</i>	<i>Microscopical examination</i> —Minute bodies of an oval form, becoming developed into fungi when the solution is left in a warm place. <i>Chemical examination</i> —Solution of sugar ferments, and turns acid very readily.
	7. <i>Carbonate of Lime.</i>	<i>Microscopical examination</i> —Light amorphous particles floating on the solution. <i>Chemical examination</i> —Dissolved with the evolution of carbonic acid, when mixed with hydrochloric acid on the microscope glass.
	8. <i>Sand.</i>	<i>Microscopical examination</i> —Small bodies, having a sharp angular structure. <i>Chemical examination</i> —Insoluble in dilute hydrochloric acid.
2. Chemical Impurities.	1. <i>Grape Sugar.</i>	<i>Chemical examination</i> —Yields a red precipitate with the copper test. For rough quantitative analysis, treat the sugar with alcohol, evaporate to dryness, and weigh the residue.
	2. <i>Vegetable Albumen.</i>	<i>Chemical examination</i> —An amorphous deposit appearing when the solution is boiled, and insoluble in nitric acid.

When on the subject of *Tea*, and its adulterations, the author enters into some details as to the process adopted by the Chinese for preparing the tea-leaf; he describes afterwards, at some length, the adulterations of tea, and the methods employed for their detection.

With respect to the adulterations of coffee, Dr. Marcet has drawn up a tabular abstract of the able report of Drs. Graham, Stenhouse, and Campbell, published by those gentlemen in the 'Quarterly Journal of the Chemical Society,' displaying, at one view, a very interesting and useful account of their investigations on the mode of detecting vegetable substances mixed with coffee for the purpose of adulteration.

When describing the injurious effects of putrid meat, our author remarks—

"The chemical changes thus induced might be divided into two stages; the first, which is attended with a peculiar well-known taste and odor, though the eye fails

to detect it, and the second stage, at once determined by the sight, when small insects are seen making their way inside the meat, and converting it into a disgusting mass of rotten flesh. In both stages of decomposition meat has become unwholesome, and decidedly objectionable as an article of food. It is a well-known fact, that meat preserved in the form of sausages, by exposure to smoke, becomes a violent poison if allowed to undergo the first stage of decomposition, previous to its being smoked. M. E. Van der Corput* states that, by official returns in Wurtemberg alone, during fifty years, more than 400 cases of poisoning with such meat have occurred, and 150 deaths.

"This poisonous effect of bad sausages was observed so far back as 1735. Dr. Kerner collected 135 cases from 1793 to 1822, of which 84 were fatal. Dr. Weiss of Wurtemberg, collected 19 cases in eight months, of which 6 died. In regard to the symptoms attending this kind of poisoning, they occur, in general, twelve or fourteen hours after having taken the food; there is much oppression, sharp pains in the stomach, nausea, vomiting, and great thirst, with irregularity of pulse, coldness of extremities, and finally syncope. Other symptoms of a nervous character accompany the latter, as paralysis of the muscles of the pharynx and eyelids, a croupy cough, and peculiar dryness of the mucous membrane. The treatment must depend on the most prominent symptoms.

"Not only are sausages in a state of decomposition liable to produce disease and death, but also cases of poisoning have occurred from pork-butcher's meat under similar circumstances; thus, in 1832, M. Chevalier, of Paris, had to make a report upon serious cases of poisoning from pork-butcher's meat; no metallic poison was found in the meat, but it was noticed to be covered with a peculiar mouldiness. Many other cases of poisoning in France with mouldy meat are recorded. Rancid fats and decayed cheese have also given rise to symptoms of poisoning.

"It is singular and important to observe, that though putrid meat be decidedly unhealthy, still meat from diseased animals appears quite *innocuous*, which is shown to be the case from experiments made at the Veterinary School of Alfort, by MM. Hussard, Renault, and others." And as a proof of the accuracy of this opinion, Dr. Marcet remarks, "that the celebrated French physiologist and pathologist, M. Flourens, relates that, during the fatal period of 1789, the poor of St. Germain and of Alfort, ate 700 or 800 horses, which were afflicted with glanders or farcy, without suffering any inconvenience."

Pure water is thus defined by Dr. Marcet, who gives the following as its principal characteristics:

"1. Water must be perfectly colorless and transparent, leaving no deposit when allowed to stand undisturbed. 2. It must be quite devoid of smell. 3. When litmus-paper is immersed into the water, the color of the paper must remain unaltered. 4. The water when boiled must not become turbid. 5. About half a table-spoonful of the fluid being evaporated to dryness on the spirit-lamp, there must be a slight residue left at the bottom of the spoon, not turning black, from organic matters. 6. The residue obtained by evaporating to dryness a sample of the water in a porcelain cup, upon the tea-urn, must not become black on the addition of a solution of sulphuretted hydrogen."

Dr. Marcet has noticed an interesting fact, showing clearly the origin of the deposit which occurs in the water of the Thames, taken at Westminster Bridge; under the microscope, this deposit reveals the presence of small masses of amorphous matter, with one or more bodies resembling vegetable hairs imbedded therein; the same hairs and amorphous masses being found to exist in fresh fæces, when submitted to microscopical examination.

Dr. Marcet enters, to some extent, on the various methods employed for the preservation of food, as *salt*ing, *smoking*, &c., which our limits preclude us from quoting. We cannot, however, omit noticing the plan adopted by Dr. Verdeil, of Paris, which is perfectly unobjectionable in a sanitary and practical point of view, and has the advantage of preserving food in a fresh condition for a great number of years, though freely exposed to the atmosphere; and likewise of reducing it, by desiccation, to about one-fifth of its original bulk. Dr. Verdeil's system is as follows:

"The vegetables intended for preservation in the Paris factory, are first cut into

* The 'Chemist,' May, 1866, No. 20.

small pieces, mostly by machinery, and then transferred to a number of shallow wire-work trays. When a set of these trays is full, they are placed on a stand, which moves on a little railway, and can be pushed into an iron chest; a contrivance not unlike that employed in washhouses to convey wet linen into the drying chambers. These iron chests may be filled with steam, under a pressure of four or five atmospheres; and as soon as the stand is rolled in, the door is shut, hermetically fastened by means of a screw, and then steam is freely admitted; by this means a temperature is rapidly obtained, sufficient to coagulate completely all the albumen of the vegetable, none of the constituents of the food being lost; five minutes suffice for this operation. The next step is the drying. The steamed vegetable is rapidly conveyed on the trays into a series of wooden chambers, where a strong draught is obtained by means of ventilators revolving very rapidly with steam power; the air admitted into the drying chambers is made to pass first through iron pipes, maintained at a very high temperature by a furnace, so that the desiccation is effected by hot air; the whole process takes so short a time, that from five to eight hours suffice to dry a large quantity of vegetables; they are afterwards set aside, ready for the market."

Before closing this short notice, we beg to observe that our author has borrowed somewhat freely from Dr. Hassall's valuable book; but, at the same time, he has taken particular care to give this work, in every respect, the credit which it deserves.

On abstinence from the Oleaginous Articles of Food as a cause of Phthisis. By Dr. CHARLES HOOKER, of New Haven, Connecticut. ('Transl. of the Amer. Med. Assoc. vol. viii, Philadelphia, 1855.)

In a report on the subject of "diet in dyspepsia, phthisis, typhus fever, dysentery, &c.," Dr. Hooker says, that careful observations for many years have led him to conclude that, "*of persons dying of phthisis between the ages of 15 and 45, nine-tenths at least have never used fat meat;*" and, also, "*that of all persons between the ages of 15 and 22 years, more than one-fifth eat no fat, whereas of persons at the age of 45, all, excepting less than 1 in 50, habitually use fat meat.*" Dr. Hooker also remarks, that, "*the few patients who have phthisis after an habitual use of fat meats, are little, if any, benefited by cod-liver oil.*" These remarks are of great interest, and they ought at once to be confirmed or refuted; for if they are confirmed, a child ought no longer to have the option of taking or refusing its proper allowance of fat.

On the use of Glycerine as a nutrient and alterative. By Dr. W. LAUDER LINDSAY, of Perth. ('Edinburgh Medical Journal,' June and September, 1856.)

The following remarks are from an elaborate paper upon the application of glycerine in medicine and in the arts. (In *medicine*, Dr. Lindsay considers glycerine as a nutrient and alterative internally, as an emollient and demulcent externally, and as a solvent vehicle in pharmaceutical preparations; in the *arts*, he considers it as an antiseptic, for the preparation and preservation of food, and for toxidermic purposes, and as used in photography, perfumery, &c., and for fuel).

"In order to test its nutrient properties, its power of increasing the weight, and improving the general vigor of body," says Dr. Lindsay, "I used glycerine internally myself, to the extent of two or three tea-spoonfuls daily for several weeks. For the space of a month, I took two tea-spoonfuls every morning in coffee, which I found to be the most palatable mode of using it. My diet and daily occupations were the same as before I began to take it; my exercise, in consequence of protracted bad weather, rather less than usual. The result was a gain of weight to the extent of one and a half pound at the end of the first fortnight, and of an additional half pound at the termination of the second,—in all, an increase in weight of 2 lbs. On discontinuing the glycerine, my weight gradually fell: and after an interval of six weeks, during which I have not used it, I find myself one pound lighter than before I began to take it daily. It produced no other appreciable effect. I have tried it as a dietetic remedy along with various articles of food, and in divers combinations. It is so readily miscible with fluids of all kinds, that there

can be no difficulty in its administration. The pure concentrated glycerine of Price's Company is too pungently sweet to be used alone or undiluted; and I may here remark that, as a general rule, whether for internal administration, or for external application, it ought to be diluted, the degree of dilution being regulated by the practitioner, according to the purpose for which he prescribes it. I have sometimes sweetened coffee with it instead of sugar. Coffee so made, however, has a somewhat peculiar taste, which might prove objectionable to some fastidious stomachs; but when it is sweetened only partially by glycerine, or when glycerine is superadded to ordinary sugar, the beverage is exceedingly pleasant, and quite free from any peculiar flavor or taste. It might be used daily to a considerable extent, when thus mixed with coffee, or chocolate; it is perfectly miscible, and does not betray its presence by floating oil globules or otherwise. In such circumstances, it behaves precisely like a syrup. Tea, to which glycerine has been added in a similar way, is much more apt to be flavored by it, but the taste is not likely to be regarded generally unpleasant, unless it is added to the extent of two or three tea-spoonfuls per cup. It also sweetens milk or cream very pleasantly. A mixture with water is very palatable, and is, undoubtedly, its most ready and cheap mode of administration.

"I carefully observed its effects as a nutrient and alterative, in eight patients—four males and four females—to whom it was given in doses of two or three tea- or table-spoonfuls daily, for the space of a month. They were weighed at intervals, to ascertain their gain or loss of flesh; for I found that apparent physical improvement was not a reliable criterion of real physical growth; that a most marked amelioration in the general health did not always coincide with increased weight of body. All the patients, before taking it, were more or less anæmic, emaciated and feeble; in all the diet, exercise, and occupations, were otherwise the same. At the end of the month, all of them *appeared* greatly improved in their general condition: they seemed plumper and stronger, and the countenance, in some, was even ruddy. In one case—a female—there was a large and fiery carbuncle over the sacrum, which was opened by crucial incision in the ordinary way; in another case—a male—there was a number of abrasions and ulcerations on different parts of the body, the result of self-mutilation by friction against walls, or by picking with his finger nails. The carbuncle, in the one case, and the ulcers and abrasions in the other, disappeared, or were healed, during the use of glycerine. I shall here guard myself against confounding the *propter hoc* with the *post hoc*. A most marked amelioration *followed* the use of the glycerine, and *apparently in consequence* of its use. But further experiments will be necessary to establish the accuracy of the latter statement.

"I have used glycerine internally in a variety of affections, in combination with various alteratives and tonics, such as iodine, iodide of potassium, quinine, and iron, or as the basis of expectorant or demulcent mixtures. I have found it to answer extremely well as a solvent, or suspending agent, or a vehicle. All the alteratives or tonics which have recently been combined with cod-liver oil, might be administered in a much more agreeable form, if dissolved or suspended in glycerine. Such are iodine and quinine, separately or conjoined; the iodide lactate and bromide of iron; the proto-iodide, biniodide, and bichloride of mercury; the iodides of arsenic and sulphur; and the valerianate of zinc. By the majority of patients to whom it was given as a nutrient, it was much relished.

"Its sweet taste would probably render it a favorite with children, in prescribing for whom it is frequently necessary to consult the caprices of the palate. There are rare exceptions, however, to its general acceptability. A patient of Dr. Stirling's—a man of about sixty, laboring under chronic asthmatic bronchitis—complained, after using it in doses of three teaspoonfuls daily for ten days, that it seriously impaired his appetite, and that he felt as if 'filled with oil.' It was persevered in for a few days after this sensation was experienced, but it became ultimately necessary to discontinue its use.

"The great advantages of glycerine over cod-liver oil, consist in its pleasant sweetness and its freedom from all disagreeable odor; in its ready solubility in, or miscibility with, ordinary fluids; in the absence of the principles, which in animal and vegetable oils, so frequently nauseate and purge; and in its solvent and other properties, which render it so useful as a vehicle or basis for pharmaceutical pre-

parations. "Its great disadvantage, on the other hand, as contrasted with cod-liver oil, we shall immediately see, is its present comparatively high price." Cod-liver oil frequently produces an acrid burning sensation in the throat; it is extremely difficult of digestion by many stomachs; by others, it cannot be borne at all, without generating disagreeable and even serious gastric symptoms; and, in general, nausea and purging are very frequent results of its use. These effects would appear more liable to be produced by the dark brown, than by the pale or colorless, cod-liver oils. Many of the vegetable oils have a similar tendency to nauseate or purge, such as linseed, olive, and almond oils. None of these disagreeable symptoms are likely to be produced by the use of glycerine, and have not been produced in any cases which have come under my own observation. Hence it is reasonable to anticipate, that glycerine ought to become a valuable substitute for the ordinary animal or vegetable oils used in medicine as nutrients and alteratives, in the numerous cases in which they are contra-indicated—always, of course, granting or assuming what has yet, however, to be fully proved, that it possesses true fattening properties—that it acts as a food."

Glycerine appears to have been tried somewhat extensively in phthisis as a substitute for cod-liver oil; but the results are very contradictory. Dr. Lindsay says:

"I have had no opportunity of trying its effects in phthisis, either when administered internally, or when applied by the endermic method. But experiments on its use in this protean disease, would undoubtedly serve to dispel the contrariety of opinion which at present exists. It has been remarked to me by those who have tried it, that it does not allay the phthisical cough; nor do we expect that it should, at least immediately or directly. But it appears to have proved serviceable in other strumous cases."

On artificial Digestion as a remedy in Dyspepsia, Apepsia, and their results.

By EDW. BALLARD, M.D., F.R.C.S. (London, Walton and Maberly, pp. 46, 1857.)

Experiments on the action of Pepsine. By EDW. H. SIEVEKING, M.D., F.R.C.S.

('Medical Times and Gaz.,' April, 1857.)

Pepsine was first introduced into the *materia medica* by Dr. L. Corvisart, of Paris, and subsequent experience has gone far to confirm the expectations arising out of the original experiments. Pepsine, indeed, is undoubtedly a natural remedy in many cases of flagging and faulty digestion, though its virtues are as yet little known in this country, and therefore we are glad to have the subject brought before us in a definite form.

1. Dr. Ballard's book is full of particulars respecting the preparation, characters, the dose and mode of administration, and therapeutical effects of pepsine, and it includes also a series of illustrative cases.

The pepsine which is at present in the market is prepared in France by M. Boudault, and it may be obtained at Mr. Squire's, in Oxford Street.

"*Preparation.* The following are the directions given by M. Boudault for the preparation of this medicine. 'Take a sufficient number of rennet bags (the fourth stomach of the ruminants), open and reverse them, and wash under a thin stream of cold water; scrape off the mucous membrane, reduce it to a pulp, and macerate it in distilled water for twelve hours; filter and add to the liquor a sufficient quantity of acetate of lead, collect the precipitate, and pass through it a current of sulphuretted hydrogen; filter again, and evaporate at a low temperature, and powder the dry residue.' Pepsine thus obtained varies in transforming power, and it was necessary to obtain a medicine whose energy for equal weights should be uniform. With this view it was necessary to assume a standard dose, and this was the quantity of pepsine, which when acidulated with three drops of lactic acid, and added to fifteen grammes of water, would transform six grammes of fresh fibrin, finely cut up, and kept in a bottle at a temperature of 40° centig. for twelve hours, with occasional shaking. This quantity being ascertained, starch is added to bring this dose to the weight of one gramme. The solution of pepsine is now, as we conclude from a recent brochure of M. Boudault, not evaporated to dryness but only to the consistency of a syrup, which is mixed intimately with starch pulverized and dried at a temperature of 100° centig. In this state the whole can be reduced to powder, and a medicine of a uniform efficiency is obtained."

"There are four kinds of 'poudres nutritives,' numbered 1, 2, 3, and 4. Nos. 1, 2, 3, are acidulated with lactic acid, in the proportion of three drops to each dose of a gramme. No. 4 is neutral, or nearly so. No. 1 is the basis of Nos. 2 and 3, which, as we shall see, contain other active ingredients.

Characters. Pepsine thus procured, and diluted with dry starch, is a rather coarse powder of a light brown color, not uniform, but evidently consisting of two kinds of powder, which are evenly mixed. It has a slight odor of gastric juice, and a slightly acid, saline taste. It slowly attracts moisture from the atmosphere, when exposed; but, in well-corked bottles, may be preserved for an indefinite time without losing its physiological properties. When water is added to it, the pepsine readily dissolves, the starch with which it was mixed remaining insoluble. The filtered solution possesses all the transforming power ascribed to it. It need scarcely be said that the pepsine contained in the 'poudre nutritive' is not chemically pure. The process of rendering it so has been followed by the destruction of its physiological properties.

Dose and mode of administration.—The average dose of the 'poudre nutritive' is about fifteen grains. This dose rarely need be exceeded. In some instances a smaller quantity may suffice, as where it is administered to infants. It may be taken dry or in solution. In the former case, the dose may be taken in a morsel of unfermented bread; in the latter it may be dissolved in the first spoonful of soup taken at dinner, provided this is cool; or it may be disguised by administration in sweetened water, &c. The principal point to attend to is, that it must be taken with, or at the commencement of the meal on which it is to act. M. Corvisart recommends the following as a formula, which meets with general approbation:

"Take of pepsine 6 grammes (93 grains); dissolve for twelve hours in syrup of acid cherries, 60 grammes (15½ drachms); add elixir of Garus, 15 grammes (3½ drachms); filter.

"A more ready mode of preparing this syrup consists in first dissolving the pepsine in a little cold water, filtering, and then adding the other ingredients. The elixir of Garus may be substituted by an equivalent quantity of syrup of cherries. A sixth part of the quantity is a dose. This mixture of pepsine with syrup must only be made extemporaneously; for, if preserved for a few days, the pepsine acts upon the cane sugar like a ferment, transforming it first into glucose, and subsequently into lactic acid. An advantage to the digestion may, as it appears to me, occasionally be gained by the simultaneous use, with the pepsine, of an additional quantity of lactic acid. No considerable quantity of liquid should precede, or immediately succeed a meal in which pepsine is used; and the same must be said of the drinking of the stronger alcoholic beverages.

"There is another mode in which pepsine may be used to promote the nutrition of the sick. I refer to the previous conversion, by its aid, of the food to be administered into true nutriment. There are cases of disease in which thus, alone, can sufficient support for the preservation of life be possibly introduced; cases where the use of solid animal food is urgently indicated, but in which the patient, from the dryness of his mouth, or other causes, is incapable of taking it; where nothing but liquid or dissolved nourishment can be introduced. These are cases in which medical men seek to maintain life by beef-tea, soups, juice of meat, and nutritious enemata. Now we begin a new era in the nourishment of such patients; we may now furnish them with all they require to maintain life, already digested, and in the form of liquid such as they can swallow, or such as, with improved prospects of success, we may inject into the rectum.

Therapeutical effects.—It may be premised, that, in availing ourselves of the use of this medicine, the food with which it is given must be animal or nitrogenized food. It, nevertheless, does seem to operate, in some degree, upon the amylaceous ingredients of the food; upon such of them, at least, as have been previously transformed into glucose, causing the ultimate conversion of the latter into lactic acid. It is, probably, on this power that the efficacy of rennet in the treatment of diabetes depends.

"An immediate effect of the administration of a dose of pepsine in dyspepsia, is sometimes, but not invariably, noticed in the production of *appetite* which had previously been absent. A few doses, in most cases, are followed by an appetite for subsequent meals; and where but little food could be taken without disgust at the

commencement of the treatment, it often happens that full meals are shortly taken with pleasure. In those instances where voracious appetite accompanies prolonged diarrhœa, from the aepsia of infancy, the appetite becomes reduced, as soon as the effect of the general improved nutrition becomes marked.

"The relief and rapid disappearance of painful sensations after meals, is a more marked effect of the use of pepsine in cases of *dyspepsia*, arising out of defective or imperfect secretion of the gastric juice; and the same thing may be said of the arrest of the vomitings, which are due to the same cause; and of flatulent distensions that arise from the chemical decomposition of the aliment."

2. Dr. Sieveking's experiments were made with specimens of Boudault's pepsine,* of Trommsdorff's pepsine, and of Oberdörffer's† dried pig's stomach. Boudault's pepsine (*poudre nutritive*) is acid to the taste, and to litmus, owing to the lactic acid it contains; it is a stone-grey powder, consisting mainly of starch and *débris* of epithelium, as shown respectively by the iodine test and the microscope. Trommsdorff's pepsine is also a stone-colored powder, caking and gritty to the touch, strongly acid to the taste and to litmus paper, and very hygroscopic; under the microscope the whole appeared composed of starch granules of various sizes, which gave a blue reaction with iodine. On addition of water the granules swelled, became ovoid, and showed faint concentric lines, with here and there a radiating fissure.

The dried scrapings of the pig's stomach also presented a stone color, but of rather a more reddish hue; the substance was pulverulent and soft, acid to test paper, and consisting of epithelium and *débris* of animal tissue; not materially altered by the addition of acetic acid, and containing a few ovoid particles, which were blued by iodine.

"Of each of these I weighed out two specimens of four grains each, and submitted cubic pieces of hard-boiled white of egg, of twenty grains each, in half an ounce of distilled water, to their action. To one specimen of each one drop of strong hydrochloric acid was added, and the whole series was exposed to a temperature of 100° Fahr. The glasses were left for above twenty-four hours, and the following is a summary of the effects produced:

"The albumen treated with—

	Loss.
1. Boudault's pepsine, weighed over 16 grs., . . .	nearly 4 grs.
2. Do. do. with hydrochloric acid, weighed under 10 grs., . . .	above 10 grs.
3. Trommsdorff's pepsine, weighed over 18 grs., . . .	" 20 grs.
4. Do. do. with hydrochloric acid, weighed over 12 grs., . . .	" 8 grs.
5. Pig's stomach, weighed over 20 grs.	
6. Do. do. weighed 15 grs., . . .	" 5 grs.

"In the case of 2 and 4, the action was very marked, the edges of the albumen were rendered extensively clear and transparent. Nos. 1 and 3 looked as if they had scarcely been affected; No. 6 was slightly digested, but much less than Nos. 2 and 4. The albumen in Nos. 3 and 5 looked as if it had undergone no change, and it was manifest that No. 5 had even absorbed water, and had thus increased in weight. The liquid was in each case tested for albumen; feeble indications of its presence were afforded by the water of Nos. 2, 3, 4, 5, and 6.

"About a fortnight after the last series of experiments, I repeated them, with nearly the same results. The same quantities of white of egg and pepsine were used, two drops of hydrochloric acid were added to one specimen of each kind, and the whole was exposed for some hours to a temperature of 110° Fahr., and the glasses shaken from time to time. At the termination of the experiment, the albumen in—

1. Boudault's pepsine, weighed 15 grains, . . .	5 grains loss.
2. Do. do., with acid, " 12 " . . .	8 " "
3. Trommsdorff, " 17½ " . . .	2½ " "
4. Ditto, with acid, " 17 " . . .	3 " "
5. Pig's stomach, " 21 " . . .	1 grain gained.
6. Do. do., with acid, " 8 " . . .	12 grains loss.

* Obtained from Messrs. Squires', the Queen's chemists.

† These two specimens were kindly supplied to me by Messrs. Hilgenberg and Schacht, of Houndsditch.

"It is stated in my notes, that the liquid of Nos. 1, 2, and 4, gave feeble indications of the presence of albumen. The albumen in Nos. 2 and 6 had become translucent, to a great extent, while the albumen in the other glasses remained opaque. The discrepancy between the two serials, is, that in the second the action of the pig's stomach with the acid was so much greater than Trommsdorff's pepsine, or even than Boudault's. The two sets of experiments agree in demonstrating that in all instances the solvent power of the preparations was much promoted by the addition of the hydrochloric acid; and that imperfect pepsine (as in No. 5 in each set) not only does not promote, but actually retards, digestion. We must not, therefore, allow our dyspeptic patients, on the mere strength of the pepsine we prescribe, to take a larger quantity of food in the first instance than we should otherwise order, but make certain of the peptic power of the agent in the first instance, or we may aggravate instead of relieving his complaint. It is evident also that Boudault's is a powerful and trustworthy agent.

"In submitting the above memoranda, I would only add, that the conclusions I have arrived at in relation to the therapeutic value of pepsine, corroborate those put forward by Drs. Corvisart and Ballard, and that I regard pepsine as an agent which we may in many diseases of malnutrition prescribe with great benefit to our patients."

On the subcutaneous application of Medicines. By Professor LANGENBECK. ('Wochenbl. des Zeitsch der Gegrrellsch, der Aestze zu Wien,' 1856, and 'Archiv. Gén. de Méd.,' March, 1857.)

During the time that Alex. Wood was endeavoring to relieve neuralgia, by injecting a solution of morphia into the cellular tissue of the painful part, Professor Langenbeck has been engaged in a somewhat similar series of experiments at Berlin. In these experiments, M. Langenbeck has employed a great number of substances, and especially those which are capable of dissolving in the cellular tissue, and in the parenchyma of organs. He has, for example, inoculated along the sides of the vertebral column with strychnine, in cases of spinal debility and paralysis, and the skin with veratria in lepra, pityriasis, and other cutaneous affections; he has inoculated the abdomen with quinine in intermittent fever, and the region of the heart with digitalis in palpitation and dropsy, the lower extremity of the spine with cantharides in paraplegia, the inguinal region with cubebæ and copaiba in gonorrhœa, and he has even inoculated the region of the kidney with extract of squills where a diuretic was wanted. The medicine is introduced, either by a grooved needle, or else a small pledget of lint or charpie is soaked in it, and applied over an abraded surface. In some instances, where a derivative or revulsive action was desired, the medicine was associated with an irritating vehicle, as croton oil or tartar emetic. No results are given.

On the Magnetism of the Body and the probable magnetic action of certain remedies. By SAMUEL RHUID, of Burley, near Otley, Yorkshire.

The researches of Faraday have shown that nearly all bodies under the influence of a powerful magnet indicate different conditions of magnetic force, severally named magnetism and dia-magnetism. The bodies thus differently affected are named magnetic and dia-magnetic. Iron is the most powerful of all the magnetic bodies. Now nearly all animal tissues are dia-magnetic, and Sir William S. Harris says that if a human body could be balanced between the poles of a magnet, it would exhibit the latter species of magnetism. But may not this great electrician be wrong in such a conclusion? may not the iron in the body tend to neutralize the opposite magnetic force? and associated with it in such an action would be the manganese, naturally combined with it in the blood, also, all the nascent oxygen in the system, both magnetic bodies, while the nascent nitrogen, which exhibits neither of these two conditions, would act as zero to both these sets of bodies, and the forces connected with them.

From these considerations, may we not infer that the body is kept in a neutralized state as regards the magnetic influences of the earth and atmosphere, and, if so, would not the disturbance of such equilibrium give rise to disease and functional derangement? Now, to the existence of a relationship between these two

sets of magnetic forces, and the phenomena of health and disease, we are further led by the therapeutic actions of the members of these two classes of magnetic substances; for while iron is our most worthy and powerful tonic, as is also manganese, when associated with it, nearly all the members of the dia-magnetic group exhibit very opposite properties.

Thus bismuth, lead, and silver are more sedative in their action; then we have the powerfully depressing sedative antimony; then the alternative resolvents, mercury and arsenic. But this subject is most strikingly illustrated by the curative properties of nickel, discovered by Dr. Simpson; these are strongly anti-periodic in cases of neuralgia, where the system will have been lowered by constant agony. Now this metal is, next to iron, the most powerful of the magnetic group, and is even capable of retaining a distinct polarity. It is further remarkable that bismuth and antimony, both of which are very powerful dia-magnetics, exhibit *very low* magneto-electric energy.

On reviewing the whole subject, there does certainly seem some ground for believing that the remedial agents found in these two groups of magnetic bodies do exercise, in some measure at least, remedial action on the body, from these peculiar properties under consideration, perhaps by tending to restore the magnetic equilibrium of the body disturbed by some morbid action, and thus to render it astatic to the earth, and in that way restore health.

Mr. Rhuid offers these remarks, not dogmatically, but rather to direct attention to a subject of great interest. For however much the question of the relationship between magnetism and the healthy body may have ceased to be made a practical inquiry among medical men, both from the difficulty of the subject and from all the absurdities of animal magnetism and electro-biology, yet it must occur to every thoughtful mind that a force which exercises such a tremendous influence on the economy of the earth, probably also on the entire universe, if the views of Faraday be true, cannot be without a very powerful one on the human body; and if so, it becomes at once a fruitful source of investigation for the practical physician; and if the subject from a point of view be successfully carried out, then it will be wrested from the hands of the charlatan who imposes on the credulous with his ideas, the more dangerous because containing a figment of truth.

On the prevention of Quininism. By Dr. DIXON, of Ashland, Tennessee. ('Nashville Journal,' and 'Dublin Med. Press,' December 10th, 1856.)

"Quininism," says Dr. Dixon, "may be entirely prevented by morphine, in the proportion of one grain of morphine, either sulphate or acetate, to twenty grains of quinine. I was led to this discovery in 1853, in the treatment of dysentery, in Hickman County, Tennessee. This disease was there generally complicated with intermittents, generally of a congestive or pernicious type. Some died in the chill. Quinine was here clearly indicated in large doses; but on account of the irritability of the stomach and bowels I was obliged to use morphine freely with it, besides using opiates freely in other forms to check the flux. I never heard one of these patients complain of quininism though using from one to two drachms a day. I immediately concluded it was prevented by the opiates; neither was there any narcotism. They seem mutually to counteract each other. Since that time I have generally combined morphine with quinine in all cases of fever or intermittents, and my patients never complain of the head being affected, though using large doses of quinine. The opiate seems to increase the febrifuge power of the quinine. I have also used this combination to advantage in well-marked typhoid fever."

On Iodoform. By (1) Dr. Glover, and (2) MM. DUMAS and BOUCHARDAT. (1. 'Lancet,' March 14th, 1857; 2. 'Archiv. Gén de Méd.,' November, 1856.)

A new preparation of iodine discovered by Sevillas, and more especially brought to notice by Dr. Glover and MM. Dumas and Bouchardat, possesses properties which promise to make it a valuable addition to our means of employing, with benefit, this important therapeutic agent. It presents itself in a solid state, in the form of small pearly particles, of a sulphur-yellow color, friable, soft to the touch,

and with a very enduring aromatic odor. It contains more than nine-tenths of its weight of iodine. It is sweet to the taste, and not corrosive.

It destroys animals in a smaller dose than iodine, after having produced more or less depression, and, in a few instances, vomiting. This depression is followed by a stage of excitement, with convulsions, contractions, &c. Iodoform does not produce the least local irritation, not producing the slightest increase of vascularity of the mucous membrane of the stomach and bowels.

Its therapeutic properties are thus arranged: 1. In consequence of the large quantity of iodine which it contains, it can replace iodine and the iodides in all the cases in which these are indicated. 2. It is absorbed with the greatest facility. 3. It has the advantage over all other preparations of iodine, of never causing any local irritation, or any of those accidents which render the suspension of iodine necessary in certain cases. 4. In addition to the properties it enjoys in common with iodine, it has advantages peculiar to itself: it allays pain in certain neuralgic affections, and produces a sort of local and partial anæsthesia of the rectum, when introduced into that organ. 5. It may be given in doses of from five to fifty centigrammes a day. 6. The principal diseases in which it has been employed with advantage are endemic goitre, scrofula, rachitis, syphilis, certain affections of the neck of the bladder, or of the prostate, and certain neuralgic affections. 7. It forms, with the greatest facility, most important pharmaceutic preparations.

On the use of the Kameela or Reroo (Rottlera tinctoria) as an Anthelmintic. By (1) Dr. THOMAS ANDERSON, Assistant-Surgeon, 43d Light Infantry; and (2) Dr. GORDON, Surgeon, 10th Regiment of Foot. (1. 'Indian Annals of Medical Science,' October, 1855; 2. 'Medical Times and Gazette,' May 2d, 1857.)

The *Rottlera tinctoria* is a plant belonging to the section *Rotoneæ*, of the natural order *Euphorbiaceæ*. It is arborescent, growing to twenty or thirty feet in height, and abounding in the hilly districts of India, especially along the base of the Himalayas. The Kameela, or Reroo, is the powder brushed off the capsules—a powder which is of a dark brick-red color, with a peculiar heavy odor, which odor is increased when the powder is rubbed between the fingers. Examined under the microscope, it is found to consist of blood-red semi-transparent granules, with entire stellate hairs, and broken portions of the same. Examined chemically, the most marked ingredient is a gum-resin, of which the properties have not yet been determined very carefully.

Kameela is extensively used in all parts of India as a dye, especially for silk, to which it imparts a fine yellow color; and it is also a favorite anthelmintic among the natives. As a dye, its virtues are found to depend upon the resinous ingredient, and its virtues as an anthelmintic are referred by some to the same constituent; but Dr. Royle is disposed to refer these latter virtues to the Dolichos-like action of the stellate hairs.

The dose of the powder, which seems to act most satisfactorily, is from $\mathfrak{z}\text{ss}$ to $\mathfrak{z}\text{ij}$ for an adult, or $\mathfrak{z}\text{ss}$ of an alcoholic tincture made by macerating $\mathfrak{z}\text{vj}$ of Kameela in a pint of rectified spirit for two days. The dose may be given at once, or in two portions, along with some aromatic water, and it is unnecessary to give any other medicine before or after.

Speaking of the practical uses of the Kameela, Dr. Anderson says, "I now know of nearly one hundred cases of tape-worm in which the Kameela has been prescribed, and in only two of these am I aware of its being unsuccessful, a proportion small enough to entitle it to a place in the *Materia Medica*, as the most valuable anthelmintic known."

And speaking upon the same subject, Dr. Gordon says: "The success and rapidity of effect of the Kameela in removing tape-worm in the cases of soldiers of the 10th Regiment, to whom I administered it, were such that I did not consider it worth my while to keep notes of them after the first two or three; nor, indeed, were the men to whom it was administered latterly taken into hospital, for they soon became aware of the wonderful efficacy of the remedy, asking of their own accord for a dose of it, after which they invariably parted with the worm in the course of a few hours, and then went on with their military duty as if nothing had happened; while, as I afterwards ascertained, considerable numbers did not think

of 'troubling the doctor at all,' but, on suffering from the characteristic systems of the worm, applied for the Kameela to the apothecary, and always with the same effect."

The first three cases which came under Dr. Gordon's notice are these:

CASE 1.—T. S——, æt. 32, 10th Foot, admitted January 25th, 1854, complaining of general debility, from which he had fallen down while on parade. He had suspicions of being affected with intestinal worms; tongue was coated with a white fur. Common quinine mixture was given three times a day until the case was more fully watched. On the 29th, ʒj of Kameela (*Rottlera tinctoria*) was administered, mixed up with water, at 9 A. M., and a similar dose at noon. At 1 P. M. he felt a little sick, had no griping, was not violently purged, but passed about twenty feet of tænia lata, the head apparently coming away as well. He immediately felt well, had no more medicine, and on the 31st was discharged cured.

CASE 2.—Private C. D——, 10th Foot, admitted 22d January, 1854, with syphilis primitiva. While being treated for that disease became affected with tænia. Kameela was accordingly given in ʒj doses, but five doses had to be given at intervals of three hours before any effect took place. A large quantity of tape worm was then evacuated, and he immediately felt himself quite well. He was discharged, cured of both diseases, on February 6th, 1854.

CASE 3.—Private S——, 10th Foot, admitted into the dispensary May 25th, 1854, stating that he was voiding pieces of tape-worm, to which he had been subject for a period of two months; and, having in the early part of the attack been treated with Kameela, he voided eighteen feet of worm. He now looked healthy. A dose, consisting of five grains of calomel, and ʒj of compound powder of jalap, was immediately given, about 6 o'clock A. M.; ʒj of Kameela about 9, and another about noon. At 2 P. M. he voided one piece of tape-worm upwards of twenty feet long, including the filamentous portion near the head. On the 26th he felt well, and was discharged.

"In the absence of a magnifying glass, it is difficult to say with precision whether the head is discharged along with the rest of the animal; but, so far as the eye can judge, I am almost positively certain that it is. The worm has, in every case observed by me, been discharged in a dead state; but whether the tendency to the generation of other tænia is removed by the medicine is more than doubtful."

The Kameela appears to have been first extensively used by Dr. McKinnross, of the Horse-Artillery, who published a brief account in the 'Indian Annals' for October, 1853.

On the Ergot of Wheat. By Dr. ROBERT. ('Gaz. des. Hôpitaux,' March 22d, 1856.)

Dr. Robert makes the following statements respecting this substance:

1. The medical and obstetrical property of this ergot is as incontestable as of ergot of rye, and its effects are as prompt, as direct, and as great.

2. Its hæmostatic action appears certain.

Dr. Robert has administered it several times against abundant discharges of blood, and immediately after labor it has almost constantly and fully succeeded.

3. In the dose of one or two grammes, according to urgency, it has frequently succeeded in lessening, if not in completely arresting the hemorrhage; and this without appearing to produce any stimulant action on the uterus.

On the use of Sulphate of Zinc as a Caustic. By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh. ('Medical Times and Gazette,' 17th January, 1857.)

Sulphate of zinc is a drug which is continually employed by medical men, in the form of collyria, or injections, or lotions; but no writer, so far as we are aware, has hitherto pointed out the fact that it is a powerful and very manageable caustic when applied as a fine powder to an open and diseased surface. In using it as a caustic, Dr. Simpson has always used the salt dried or anhydrous, and finely levigated. Sometimes he has applied it in the form of a simple powder, sometimes in the form of a paste made with glycerine, and sometimes as a strong ointment. To

work it into a paste, about one drachm of glycerine to an ounce of the dried powder is required; and in this form it keeps for any length of time ready for use. A caustic ointment may be formed by pounding together two drachms of axunge with an ounce of the dried sulphate of zinc.

When used in the form of a powder, paste, or ointment to an open or ulcerated surface, the part to which it is applied is rapidly destroyed to a depth corresponding to the thickness of the superimposed layer. The slough, eschar, or devitalized part is of a white color, and usually separates on the fifth or sixth day, leaving behind it (if the whole morbid tissue is removed) a red, granulating, healthy, and rapidly cicatrizing wound. Dr. Simpson has sometimes seen the edges of the wound already more or less puckered and contracted at the time of the separation of the eschar. The white slough or eschar itself shows no tendency to chemical or putrefactive decomposition, but is firm in texture and free from taint or odor. If we apply the sulphate of zinc in any case of malignant or semi-malignant ulcer or deposit, it will require to be repeated immediately after the first or preceding eschar separates, provided any yellow or unhealthy tissue remain at the bottom or in the sides of the wound, or if the surrounding hardness is not yet quite dispelled. After the last eschar is removed the remaining wound or sore will rapidly heal up under any common applications, as black wash, astringent lotions, water dressing, &c.

Sulphate of zinc, like chloride of zinc, will not act as a caustic where the epithelium is entire, or unless it be applied to a broken or open surface. This is at once an advantage and a disadvantage; an advantage in so far that it prevents all fear of the caustic ever unnecessarily affecting any of the healthy contiguous surfaces and parts, and renders its application and use far more simple and certain; and a disadvantage, because when we wish to apply it to a non-ulcerated structure, we must first remove the intervening epithelium by a small blister, or more effectually by the application of an alkaline or acid caustic. A paste made with sulphuric acid and powder of sulphate of zinc will both, perhaps, at once remove the epidermis, and give at the same time the action of the mineral caustic. If too liquid, it may be prevented from spreading beyond the desired spot by enclosing that spot within a circle of oxide of zinc powder, or within a ring made with an oxide of zinc paste.

The local inflammatory reaction around a sulphate of zinc eschar is generally slight and transient. Dr. Simpson has never witnessed any very marked effusion or swelling in the surrounding parts, except where the caustic was used in the neighborhood of parts containing a large quantity of loose cellular tissue. Nor has he ever seen the general system affected by any absorption of it, or any special constitutional symptoms or disorder follow the topical application of sulphate of zinc, however freely and lavishly used. Like other strong caustics, its action is usually, but not always, attended for a few hours with considerable local pain and burning. This local suffering, however, generally disappears more rapidly with sulphate of zinc than with arsenic or chloride of zinc, and may always be relieved when necessary by the temporary use of anæsthetics or opiates, or by applying locally along with it, or before it, a very small quantity of sulphate of morphia. The devitalized part or eschar also produced by sulphate of zinc separates sooner than after most other caustics. The eschar made by arsenious acid seldom separates before the sixteenth or eighteenth day; that made by the chloride of zinc usually separates from the tenth to the twelfth day. Dr. Simpson has generally found the eschar made by sulphate of zinc to separate as early as the fifth or sixth day.

The advantages of the sulphate of zinc, as compared with other caustics, are, therefore, in general terms: 1. Its powerful escharotic action. 2. The rapidity of its action. 3. Its great simplicity and manageableness. 4. Its facility of application. 5. Its non-tendency to deliquesce or spread. 6. Its perfect safety. 7. (Dr. Simpson believes) its efficacy.

"On this last point, however, more experience will require to be accumulated," Dr. Simpson says, "than I can yet offer. But I have seen not only the surface of cancrroid or cancerous ulcers speedily and perfectly excavated by its application, but the surrounding characteristic induration become at the same time rapidly absorbed, and the remaining wound very speedily cicatrize. I have seen, more than once, ulcers with irregular everted edges, dirty cavities, and indurated bases

and sides, and which had been open for years, become quite softened, closed, and healed over, within five or six weeks after the first application of the caustic. In spreading epithelial or canceroid ulcer of the cervix uteri, I have found, in as brief time, under the free local application of powdered sulphate of zinc, the ulcerated surface exfoliated, the sanguineous and sero-purulent discharges arrested, the parts temporarily, at least, if not permanently, cicatrized and healed, and the patient's health, strength, and spirits restored, though, when first inserting the caustic, I believed the disease to be altogether beyond the reach of any remedial measures.

"Let me add here, that I have tried as caustics other metallic sulphates besides the sulphate of zinc. The sulphates of iron, nickel, &c., have a similar escharotic action, without presenting, as far as I know, any special claims or advantages.

"In a preceding paragraph it has already been remarked that many of the most famed secret pastes and applications that have at different times and in different countries been in fashion for the cure of cancer, contain arsenical preparations as their essential and efficient base. Perhaps it may be found that sulphate of zinc is the principal ingredient in other secret caustic remedies. A few days ago, after showing some examples of the caustic properties of sulphate of zinc to Dr. Johnston, of Worcester, Massachusetts, during a brief visit which he paid to Edinburgh, that gentleman stated to me, that from accidental information which he had obtained from a druggist, he believed sulphate of zinc to form the basis of one, if not more, celebrated secret American applications for the cure of cancerous disease.

"Caustics are often used in practice for other purposes than the extirpation of cancerous and canceroid malignant and semi-malignant ulcerations and deposits; and I have successfully employed sulphate of zinc in fulfilling most of the indications for which escharotics are resorted to: as for example:

"1. In the treatment of indurated inflammatory ulcers of the cervix uteri. To this part it can be readily applied, either through a speculum, or still more easily by means of a small ivory or wooden cylinder and piston, like the common leeching tube, or like Dr. Locock's glass tube for carrying silver solution; or in the form of a medicated pessary, made up with a small quantity of axunge or glycerine.

"2. In cases of lupus and rodent non-malignant ulcers of the nose and face, and other integumental parts. Here we must not forget Rayer's rule, that not one, but a succession of applications of any caustic, is generally necessary for ultimate success.

"3. In the annoying and intractable ulcerous forms sometimes assumed by certain cutaneous affections. Thus, I have seen it arrest a case of *Impetigo Rodens*, which, in despite of various applications, had gone on progressing for two years.

"4. In eating down the small red sensitive tumors so common at the orifice of the female urethra, and in the neighboring valvular mucous surfaces.

"5. In destroying ulcerated condylomata and watery excrescences.

"6. In several cases I have easily introduced the sulphate of zinc and glycerine paste, by means of a small catheter-like tube and piston, into the proper cavity of the uterus, to cauterize the open surfaces and diseased structures leading to obstinate menorrhagia; and which deep points it is, I believe, sometimes difficult, or indeed impossible to reach with any other efficient caustic. In the uterine cavity, as elsewhere, sulphate of zinc acts only upon any abraded and diseased surfaces that exist, and not to any extent upon the parts covered with healthy mucous membrane.

"7. I have tried to take advantage of the highly contracting power of the cicatrices left by sulphate of zinc in the replacement and sustentation of chronic prolapsus of the uterus and bladder.

"It will, perhaps, be found also adapted to the treatment of some obstinate ulcers of the limbs, and to the early cauterization and destruction of syphilitic chancres and pustule maligne.

"Other practical applications of sulphate of zinc as a caustic will, no doubt, sometimes suggest themselves to the minds of the clinical surgeon and physician."

On the effects of long-continued action of Cold Water externally. By Dr. C. W. BENGE JONES and Mr. W. H. DICKINSON. ('Lancet,' May 2d, 1857.)

Opportunities of making use of some douche and shower-baths of more than ordinary potency having presented themselves, the following experiments were undertaken with a view of removing some of the uncertainty which now prevails regarding the effects of the outward application of cold water. These experiments are divided into three sections: 1st, on the general effect of the douche or shower-bath; 2dly, on the effect of the shower-bath at different temperatures; 3dly, on the effect of the shower-bath in different circumstances.

Section 1.—The first experiment was made by a douche-bath, by which 225 gallons of water were allowed to fall upon the head for a quarter of an hour. By this the pulse was greatly relaxed in frequency and power, and it became irregular; at one period of the experiment the reduction amounted to 30 beats in the minute. The second experiment was made with a shower-bath delivering about 20 gallons of water a minute—upwards of 300 gallons in 15 minutes. The results were similar to those obtained with the douche-bath, but were more marked. During the second minute the pulse was found to be less frequent by 40 beats than it had been previous to the fall of water; and from the fifth minute to the fifteenth, when the experiment terminated, it was observed to be frequently intermitting and very weak. The third experiment was made with a still more powerful shower-bath, at Vienna. This delivered nearly 38 gallons of water a minute—upwards of 550 gallons in fifteen minutes; but the openings in the rose were very fine, and the shower was much spread. In the fourth minute the pulse was found to be imperceptible, and during the remainder of the quarter of an hour for which the bath was continued, it was feeble and irregular. Afterwards the pulse was observed to be smaller and rather slower than it had been previously, but it was immediately restored by a warm bath. Thus it seems that a strong douche or shower-bath produces an excessive immediate effect upon the pulse. By the first shock it may be reduced in rate even fifty beats in the minute; it then recovers a little, but after four or five minutes, when the shivering commences, it again becomes reduced, and often is rendered quite imperceptible.

Section 2.—The experiments in this section were made for the purpose of showing whether the effect varied with the temperature of the water. The most interesting are two which were made with the powerful shower-bath alluded to in Section 1, second experiment. In the first, the water was at 70° Fahr. The pulse did not fall in rate for three minutes, although it lost much in strength and volume. When shivering commenced at the end of the fourth minute, the pulse was imperceptible, and it was scarcely to be felt until the end of the sixth, and it remained weak and irregular until the termination of the experiment at the end of the tenth minute. In the second experiment the water was iced down to 50 deg. Fahr. The effect was much more rapid. During the first fifteen seconds the pulse was reduced at the rate of 38 beats per minute; this was followed by a reaction better marked than before, and the annihilation of the pulse, which followed the commencement of shivering, was much more complete and of longer duration.

Section 3.—Some of the effects observed to follow the use of the shower-bath, taken under varying circumstances, are here stated. Two experiments were made: one at the baths at Ischel, in Austria, and one at the Prussian bath, at Vienna, where cold shower-baths were alternated with very hot vapor-baths. It was found that the increased action of the pulse produced by the exposure of the body to hot steam prevented that depression which would otherwise have resulted from the cold water. A converse experiment is quoted from Dr. Currie's 'Medical Reports.' An ague patient, who had derived advantage from the cold effusion during the hot stage of the fit, nearly died from the alarming depression which resulted from the same application while he was in the cold stage.

The general conclusions are—1. The usual effect of a strong douche or shower-bath is the immediate depression of the pulse. By the first shock of water between 64 deg. and 68 deg. Fahr. the pulse becomes weak and irregular, and may be reduced in rate even 50 beats in the minute. After the first shock the pulse recovers a little, but remains weak until the secondary effect or shivering comes on, when it becomes weaker and intermitting, and may be quite imperceptible.

After ten or fifteen minutes the pulse remains very small and weak, and shivering continues whilst the experiment lasts. 2. If the shower-bath is a small one (e.g. 6 gallons), and the person taking it in good health, no great difference is perceived in the pulse whether the water is hot (110 deg.) or warm (74 deg. Fahr.) If the water is very cold (47 deg. Fahr.), the pulse becomes smaller, but the rate is not affected. With a shower-bath giving twenty gallons per minute, a difference of twenty degrees (from 70 deg. to 50 deg. Fahr.) causes a great difference in the shock. The difference in the after-effect, or shivering, is not so marked. The depression of the pulse when the shivering comes on is more continuous with the colder water, and is more manifest up to the end of the experiment. 3. When the pulse is raised above, or depressed below, its healthy standard, the shower-bath or douche produces very much less or a much greater effect than would be produced by the bath under ordinary circumstances. As it seemed possible that a part of the reduction of the pulse might be due to the action of the cold water upon the capillaries and the radial artery in which the pulse was felt, a set of experiments were made in which the forearm and hand were exposed to temperatures varying from 25 deg. to 124 deg. Fahr. The results of these experiments may be thus stated:—1st. When one arm is in water at 50 deg. and the other in air at 46 deg. Fahr., no difference in the pulse is observed in fifteen minutes. 2d. When one arm is in water at 110 deg. Fahr., and the other in air at 46 deg. Fahr., little if any difference could be felt in the same time. 3d. When one arm is in water at 44 deg. and the other in water at 107 deg. Fahr. there was the same result in the same time. 4th. Even one arm at 33 deg. and the other at 112 deg. gave no result. 5th. Still lower and higher temperatures, 25 deg. and 115 deg. Fahr., did not give any decided result in fifteen minutes. 6th. The douche-bath on the arm and hand, at 42 deg., produced no greater effect on the pulse than still water at 44 deg. Fahr. Hence, generally, it follows, that no part of the effect produced by the shower bath on the pulse, depends on the action of the water on the hand and forearm in which the pulse is felt.

V.

REPORT ON PSYCHOLOGICAL MEDICINE—PART II.

BY

C. LOCKHART ROBERTSON, M.B. Cantab., F.R.C.P. Edin. Honorary Secretary to the Association of Medical Officers of Asylums and Hospitals for the Insane.

(Concluded from Vol. XXIV, July—December, 1856.)

§ V. *Classification and Forms of Mental Disease.*

Dr. Monro's two papers on the classification and forms of insanity ('Asylum Journal of Mental Science,' January, 1857) are two lectures of a series upon the history of the insane mind. In the first, he shows the imperfection of the old terms mania, melancholia, dementia, &c., which, however useful as indicating the physical states of the patient, are not sufficient *alone* for the distinguishing mental disease, and should be used rather as subdivisive than as generic terms. He puts forward the advantages of dividing mental diseases in a more philosophical manner, and in a mode more in accordance with the great divisions of the mental faculties in the healthy state. Emotional, notional, and intelligential insanity, are the generic terms proposed, while these he would subdivide by terms applicable to the physical states of the patients. By emotional insanity is meant that form of disease when the higher faculties of the mind are comparatively undisturbed, and the emotions chiefly suffer. By notional, that in which one or more of the ideas run wild, though general incoherence is not attained. By intelligential, complete incoherence is evidenced. To show the distinctness of this division, he says—

"Three persons obstinately refuse food, one of them is so miserable that he wishes to die and does it purposely (emotional insanity). A second thinks his food is poisoned, or that if he eats he will burst (notional insanity). A third is so raving and incoherent, that he knows not whether he eats or not (intelligential insanity)."

There is something more analytical, more radically connected with the true history of the mind, to draw such distinctions, than to dwell only on the vagaries of manner and conduct, which change continually in the same case, and which frequently coexist with those of an opposite character; thus the maniac is often melancholic, and both maniac and melancholic frequently evince demented symptoms.

At the same time, Dr. Monro feels the necessity of referring to the physical symptoms as well as the mental history in his classification of the insane; and in order to insure this, he subdivides these generic terms into two divisions each respectively, the one marked by excited, the other by depressed symptoms; and he gives names to each of these subdivisions. He confines the terms mania, and melancholia, and dementia, to the excited and depressed forms of intelligential insanity; monomania and monomelancholia to the two forms of notional insanity; while he forms two new terms for the two forms of emotional insanity.

26. *Dr. Monro's Table of the classification of Mental Disease.*

Metaphysical Symptoms.	Physical Symptoms.	Phraseology.
Emotional Insanity.	{ Nervous Exaltation.	Exmentia,
	{ Nervous Depression.	(a compound of the Greek <i>ex</i>). Dysmentia, (a compound of the Greek <i>dus</i>).
Notional Insanity or Simple Delusions.	{ Nervous Exaltation.	Monomania.
	{ Nervous Depression.	Monomelancholia.
Intelligential Insanity, or Incoherence.	{ Nervous Exaltation.	Mania.
	{ Nervous Depression.	{ Melancholia. Incoherencia. Acute Dementia.
Insanity complicated with Motor Derangement.	{ Insanity combined with Convulsions.	{ Epileptic Insanity.
	{ Insanity combined with Cataleptoid Symptoms.	{ Hysterical Insanity.
	{ Insanity combined with Paralysis.	Cataleptoid Insanity. Paralytic Insanity.

27. *Dr. Monro's view of the nature of Excited and Depressed Mental Power.*—Dr. Monro considers excited action and deficient action in mental matters to represent only two states or degrees of depressed nervous action. His view is, that perfect strength is exhibited by calmness of function, and that as much as convulsion and paralysis are both the consequences of nervous injury in the motor system, so morbid excitement and profound melancholy or torpor are the signs of loss of nervous tone in the sensorial system; he says—

"That a morbid excess of action is but a step short of depression of action is provable in many ways. If we take an example from that part of the nervous system which is devoted to the special senses, we find that phantoms and blindness, tinnitus aurium and deafness, succeed each other, according to the degree of injury to the nerve substance. In the motor system, convulsion and paralysis follow a similar law; and in the system of the true sensorium, we have but to note the varying effects of such a poison as alcohol on the mind; a little causes excitement, a little more torpor.

"Now, madness is to be characterized very much by the results of too much, and too little. Mental phenomena are extravagant or deficient, or both at once; and to those who study the disease, it is quite apparent, that what is required for cure is to restore this lost equilibrium."

The great difficulty of classifying the insane in any strict and satisfactory way, on account of their endless idiosyncrasies, is thus touched upon: "I find that the varieties are far greater and more numerous among the insane than the sane, and that a moment's reflection will show us it must be so." "There are among the sane certain great laws of conscience, expediency, and reason, which actuate all, and in defiance of the difference of their instincts bind them together; and thence arises a large amount of that uniformity in thought and action which so happily exists. Among the insane, on the other hand, in proportion to the extent of their insanity, these laws cease to have force; instincts consequently acquire an undisputed sway, and idiosyncrasies grow and develop." "Patients in proportion as they are insane have no sympathy for one another." "I have frequently taken fifty insane persons or more and tried to classify them, and have seldom if ever succeeded in finding two really alike; they may generally fall into great varieties pretty well, though these are often much less marked than books would give occasion to believe."

28. *The Phenomena of Progressive Mental Disease.*—Dr. Monro believes that in what he calls a normally progressive case, these various forms are steps in advance of one another; he says—

"I believe it is a right thing to esteem emotional insanity rudimentary to notional, and notional to intelligent. In laying this down as a rule, I do not mean to say that all cases of more complete insanity must have passed through the more rudimentary forms (as I shall show hereafter); but if we take notice, we shall find, that while many do pass through these progressive stages, this gradual journey is remarkably in accordance with the analytical history of the mind. By this I mean, that I believe it to be a generally recognized thing among metaphysicians, that so far as mental phenomena depend on a person's own experience, and not on the testimony of others, ideas are acts in advance of sensations and emotions, and that the acts of the intelligence, such as the memory, the reason, and the will, are acts in advance of sensations, emotions, and ideas."

And as an example of this sequence in a diseased or abnormal state, "Let us mark the gradual influence of chloroform on the mind, as the more rapid, and therefore the more remarkable agent. The person placed *gradually* under its influence will give an account which is very much to the effect, that his emotions are first affected, while his notions and intellect remain clear and unaffected; that he then passes through a period of delusion, which runs on into incoherence, and final extinction of mental activity."

"Sensational and emotional delight advances by degrees into the regions of phantasy, the external world recedes more and more, the emotions become embodied into ideal existences, the dream has begun, and the patient fancies himself in the presence of things and persons who have no real objective existence. By degrees these images rapidly succeed each other and without any order, all connection or sequence is lost, and the patient has really passed into the stages of ideal and intelligent insanity."

Having made these preliminary remarks, Dr. Monro proceeds to trace more in detail the history of mind in its course at various stages from the ground of sanity to the culminating points of complete incoherence.

29. *An historical sketch of Mental Phenomena from perfect Health to complete Unsoundness.*—"I propose now to trace the mind through the varying conditions of disease, and to make as clear as I can anything which indicates the course of this journey. Before I come to the history of unsound mind, I propose to give a brief sketch of healthy mind in the two conditions of physical refreshment and physical exhaustion of its nervous instrument the brain. And I do this for two reasons: first, that by this means we shall best get on to the track by which we are to trace every form of insanity; and, secondly, that while the mind has moral liberty, or, in other words, is healthy, it can speak for itself, and tell us something of the phases of mental and physical suffering which it goes through. In the case of the insane we must trust very much to the hypothesis of doctors; the patient is the victim of impressions, he can no longer view them objectively; but the sane can speak for himself. He can say, though I am suffering from intense discomfort, though my senses play me false, though I feel a difficulty in controlling my thoughts, still I know that the external world is the same as it ever was, the medium of my own mind is the only thing at fault."

"I propose, therefore, to comment upon the following states:

- "1. *The healthy mind in a sound and refreshed body.*
- "2. *The healthy mind in an exhausted or diseased body.*
- "3. *The diseased mind suffering from emotional insanity.*
- "4. *The diseased mind suffering from notional insanity.*
- "5. *The diseased mind suffering from complete or intelligent insanity.*"

Of these the first chapter only has been given. We shall hope, on the completion of these lectures, to recur to Dr. Monro's labors.

30. *Dr. Daniel Tuke's Lectures on the forms of Mental Disease.*—The several forms of mental disease are carefully and clearly described by Dr. Tuke, visiting physician to the Friend's Retreat, York, in four papers, or rather lectures, in the 'Asylum Journal of Mental Science.' (July, 1856, *et seq.*)

Dr. Tuke divides the varied forms of mental disease under the following heads :

- I. *Forms of mental unsoundness, involving the Intellect.*
- II. *Forms of mental unsoundness, involving the Moral Sentiments.*
- III. *Forms of mental unsoundness, involving the Animal Propensities.*

These lectures present a careful summary of the several forms of mental disease. The writings of all the leading psychologists have been evidently collated in their preparation, and we look forward with satisfaction to seeing them take their place in the 'Manual of Psychological Medicine' shortly, we understand, to be published by Drs. Tuke and Bucknill.

In the next section of this report we present an analysis of Dr. Bucknill's excellent practical papers on the diagnosis of mental disease—another chapter doubtless of the promised manual. In the meanwhile, the publication of these and similar practical papers in the pages of the 'Asylum Journal of Mental Science,' must tend to raise the professional reputation of the association of which it is the official organ, as well of its accomplished editor and of his contributors.

§ VI. *Diagnosis of Insanity.*

The 'Asylum Journal of Mental Science' for the past year contains a series of able articles on the diagnosis of insanity, from the pen of the editor, Dr. Bucknill. The diagnosis of insanity is frequently a task of extreme difficulty, and of the most urgent importance. Not only may the happiness of families and the safety of society depend upon its being rightly made, but an error in it may exculpate a villain, or consign an irresponsible lunatic to a shameful end upon the scaffold. Questions of criminal lunacy are in reality nothing more than questions of diagnosis.

31. *The Physiognomy of Insanity.*—"The extreme distortion of face," says Dr. Bucknill, "produced by acute mania, or melancholia in its higher degree, is easily recognized. It may, however, be needful to distinguish it from the expression of cerebral inflammation, or of fever. The distinguishing characteristics of cerebral inflammation attended by maniacal symptoms are, a greater suffusion of countenance, a firm knitting of the brows expressive of intense pain, and a fierce, prominent, and blood-shot eye. It is in meningitis rather than in mania that it may be truly said—'And each strained ball of sight seemed bursting from his head.' The patient suffering from cerebral inflammation has a motiveless ferocity of aspect, rarely met with in pure mania. The stage of effusion in meningitis, and all the stages of some forms of deep-seated cerebral inflammation, in which the meninges are not affected, require to be distinguished from dementia, rather than from mania. The history of the case, however, and the affection of the muscular system, will generally render the diagnosis easy.

"The aspect of countenance in the delirium of fever is sufficiently different from that of mania, to afford valuable aid in the discrimination of these two conditions. In fever, whatever may be the degree of excitement and the amount of delirium, the countenance indicates low emotional force. In the delirium of mania, on the contrary, the expression of emotional force is highly exaggerated. This difference is very marked in the expression of the eyes and the mouth. Whatever may be the character of febrile delirium, the expression of the eyes is comparatively devoid of meaning, the muscles of the mouth, although relaxed, are devoid of mobility. The muscles of the face, like those of the body in general, are greatly deficient in power and tone, and the features which are controlled by the facial muscles, are relaxed and without expression. If there is any mobility of the facial muscles, it is tremulous and feeble, indicating want of power; whereas, in mania, the play of these muscles is full of expression and purpose. It is vigorous and tense, and plainly marks a concentration of nervous force. The deepening wrinkles on the face of a patient suffering from the delirium of fever, are the result of emaciation; those which furrow the face of a maniac, result from the tense contraction of the muscles of expression.

"In a great number of cases, a remarkable peculiarity is observable in the physiognomy of the insane; this exists in a want of accord in the expression of the different features. This is often remarkable and characteristic, and reminds one of

those children's toys, in which the upper and lower halves of painted figures are separable and capable of being joined in fantastic reunion. Thus, the lower face of an alderman may be added to the upper face of a handsome woman, and upon the simpering mouth of the latter may be superadded the stern brows of a soldier. The effects produced by this amusing toy are only exaggerations of what may be observed in the insane. The expression of mouth often gives the lie to that of the eye and the brow, and while the whole features are full of expression, it is often impossible to designate truly that which is expressed. This is, perhaps of all, the most characteristic peculiarity of insane physiognomy, because it is only observed among the insane. It is, however, frequently absent in them, and the patients in whom this peculiarity is strongly marked, are probably less numerous than those in which it is absent. Its presence, therefore, as a symptom of insanity is of considerable value, while but little weight can be attached to its absence.

"Another peculiarity in the physiognomical expression of the insane, is the apparently causeless and motiveless play of feature which is frequently observed in them. This is only remarked in chronic mania, and in the earlier stages of acute mania, and, conjoined with the last mentioned conditions, it occasions that state of facial expression upon which the popular idea of a madman's looks is founded. These changes, although apparently causeless and motiveless, are not so in reality; they are, indeed, a reflection of those rapid changes in the emotional state which often exist in mania.

"The physiognomical expression of the insane must be studied with reference to the form of disease. Thus, in melancholia, the facial expression is emotional; while in mania, it is emotional and intellectual, and is marked by the characteristics of changeableness and inconsistency above described. In dementia, on the other hand, all expression has disappeared, the vacant stare and the meaningless lineaments indicate the loss of thought and of desire. It is only necessary, in this place, briefly to advert to the great peculiarities observable in the face of general paralytics,—the trembling lips, the drooping brows, the features expressive of a mixed state of imbecility and excitement, the eyes with pupils of unequal size, together afford to the experienced alienist, unquestionable testimony of the existence of this most hopeless of maladies."

32. *Leading features of the diagnosis of Mental Disease.*—Dr. Bucknill gives many excellent and practical directions respecting the manner in which the observation and interrogation of a person suspected to be insane should be conducted, and respecting the outward signs of madness in the habits and demeanor of the patient. He also enlarges upon the subject of hereditary predisposition, causation, and incipient symptoms, as they respectively bear upon the question of diagnosis. Our limits will only permit us to extract the leading features of diagnosis in two of the principal forms of mental disease. Dr. Bucknill commences with the simplest form of mental disease, viz., dementia, of which he says:

"There is, perhaps, no form of mental disease in the early stages of which it is more difficult to form a decided opinion, than in dementia. This difficulty arises from the frequent absence of several indications which render valuable assistance in the diagnosis of other varieties of insanity; the demeanor and conduct of the patient is often very slightly, if at all, changed; there is nothing strange in his appearance, no *égarement* in look or manner. The facial expression, indeed, is often weak and undecided in conversation; the attention is found to be feeble, but not wandering; but the earliest and most trustworthy symptom is loss of memory. The physician will often find, that in the course of conversation, the patient forgets what he has been talking about a few minutes previously, and that he has not the slightest recollection of the events of the previous day. This form of disease very rarely comes on without a decided exciting cause, and the opinion of the physician will often be facilitated by testimony as to the existence of such a cause, and enfeeblement of the faculties resulting from, and speedily following, it. The most frequent causes of primary dementia are injuries of the head, and attacks of apoplexy; the causes next in frequency are fever and emotional disturbances, especially grief.

"In primary dementia, the difficulties of the physician are increased by the absence of any form of delusion, namely, of illusion, hallucination, or delusion proper.

"In many instances, the most experienced physician will not be able conscientiously

tiously to give a decided opinion in the early stages of this malady. Its progress, however, is generally certain, the attention becomes more and more enfeebled, until even the sensational indications of the bodily wants cease to be observed, and the patient, if neglected, lapses into what are called dirty habits. In its mature stages, this form of disease is recognized with the greatest facility."

The diagnosis of Acute Mania.—This is to be made upon the following grounds: "Almost invariably in acute mania there is loss of sleep, a diagnostic symptom of the utmost value between the real and the feigned disorder. The acute maniac will often pass five or six days without any sleep, and five or six weeks with only three or four hours of sleep at intervals of several days. An impostor, feigning the violent form of madness, cannot refrain from deep and regular slumber, which falls upon him with the more certainty as he exhausts himself in his efforts of spurious fury. The impostor, moreover, cannot feign the physiognomical expression of acute mania, or at all events, he cannot maintain it for more than a few minutes. A man may imitate frantic gestures or shout gibberish without difficulty so long as his physical strength enables him, but he cannot maintain any look expressive of strong emotion unless he has practised the histrionic art with great care and success. The voice-muscles, and those of the limbs, are constantly exercised in obedience to the will, but those of the countenance are the involuntary exponents of emotion. Conversation, properly so-called, is always difficult, and often impossible with an acute maniac. In many cases the mind is so much occupied by delusive ideas, that only a few disconnected words can be elicited; more frequently, however, acute mania is accompanied by garrulity; this is especially the case when the exaggerated emotions are cheerful and expansive. This form of mania often exists without prevailing delusion, and the patient rambles on in his talk through a strange medley of boasts, promises and threats, oaths and obscene remarks, in a manner which renders it easy to understand why M. Falret supposes it possible that in this condition there is a spontaneous creation of ideas.

"The restless and ever changing condition of the mind, expresses itself as strongly in action as in vociferation and wild words. The patient is always in movement, running, dancing, gesticulating, embracing, or fighting with those around him, displacing, or sometimes breaking furniture, thumping with fists on the door of his room, and evincing in manifold ways the restless activity of the muscular system. It is probable that this impulse to action is not entirely dependent upon the condition of the brain. The nervous system generally, is in a state of excitement, causing an uncontrollable desire to expand its energies in excessive muscular action. This restlessness, however, is not met with in all cases. In gay mania, in mania with fear and anxiety it is common; but in morose and sullen mania the patient will often retain one position for a considerable time. But even under such circumstances the clenching of teeth and hands, the half involuntary movement of the limbs, evidently restrained by the will, indicates strong impulse to action.

"The condition of the mental faculties in acute mania presents the widest differences. In many instances no trace of delusion can be discovered in a patient who is vociferating, swearing, laughing, reproaching, in constant movement, and without sleep. All the observations and the remarks are sometimes found to have a certain kind of cleverness and shrewd appreciation of all that is taking place. The attention skips from object to object with choreic rapidity and abruptness, causing exaggerated and absurd emotional states, but in many instances not falsifying the judgment. In most instances, however, delusions and hallucinations exist, and the task of detecting them is not difficult, for in this form of disease the patient is so demonstrable that he usually dins his delusion into your ears.

"Hallucinations appear to be more frequent in acute mania than delusions proper, and also more frequent than they are in any other form of insanity. Hallucinations of sight are very common. In acute mania patients see the Deity, and angels, and devils, hear music and voices, believe their food to be human flesh or poison, and a hundred hallucinations of the same sort, far more frequently than in other forms of insanity.

"The diagnosis of meningitis from mania is made by observing in the former, premonitory rigors, and excessive cephalalgia, followed by acute febrile disturbance

of the organism, a bounding pulse, a hot and dry skin, a prominent and bloodshot eye, a contracted pupil with a great intolerance of light, accompanied by a fierce delirium, in which illusions of the senses are common. In acute mania many of these symptoms are often absent, and those which do present themselves have much less intensity than in cerebral inflammation. In cerebral inflammation, tendency to muscular exertion so common in mania is absent, or only demonstrates itself in brief actions instigated by the delirium. The emotional disturbance is less remarkable than in mania. The affection also tends rapidly to terminate in recovery or in death. In the latter case convulsions supervene, the pulse becomes rapid and small, the pupil dilates, the skin is covered with clammy sweats and the vital powers gradually fail; death may also come on more rapidly from coma. This rapid sinking is not observed in mania. Some patients do indeed die suddenly from what is called maniacal exhaustion, but even in these cases the course of the disease is more prolonged than in fatal instances of cerebral inflammation. The immediate cause of death in such cases is sudden syncope."

§ VII. *Statistics of Insanity.*

In the 'Half-Yearly Abstract,' Vol. VII, January—June, 1848, we presented, in our report on psychological medicine, an analysis of Dr. Thurnam's carefully prepared 'Observations on the Statistics of Insanity.' Since that period no attempt has been made to draw any farther statistical conclusions from the records of our large lunatic asylums until the end of last year (November, 1856), when Dr. Hood presented to the governors of Bethlem Hospital an admirable decennial report (1846–55 inclusive), on the statistics of that hospital so far as they relate to the *curable patients** treated there. These numbers are, male, 1066, female, 1663, total, 2729, whose history is treated of under the following heads, to each of which a well-digested chapter is allotted:

1. Patients admitted as curable, percentage of recoveries and mean annual mortality. 2. Age (Table II). 3. Sex. 4. Education (Table III). 5. Religion (Table IV). 6. Domestic condition (Table V). 7. Social condition (Table VI, and VI a). 8. Residence (Table VII). 9. Apparent and assigned causes (Table VIII, VIII a, and VIII b). 10. Duration of disease before admission (Table IX). 11. Number of previous attacks (Table X). 12. Time of attacks (Table XI). 13. State of the general health (Table XII). 14. Form of Insanity (Tables XIII, XIV, XV). 15. Treatment of insanity (Tables XVI, XVII, XVIII, XIX). 16. Causes of death and post-mortem appearances (Table XX). We shall endeavor, as far as our limits admit of, to examine a few of the results of Dr. Hood's able investigations.

33. *Percentage of recoveries and mean annual mortality.*—The percentage of the recoveries at Bethlem during this decennial period ranges at 64·19, and the mean annual mortality at 6·37; while for the 100 years ending December 31, 1855, Dr. Hood states these relative results to be 43·05 per cent. of cures to an annual mortality of 8·27.

From a table by Dr. Daniel Tuke, in the 'Psych. Journal,' July, 1854, and quoted by Dr. Hood, it appears that the average results drawn from the statistics of various asylums in England, Holland, France, Germany, &c., stand in the relation of 39·74 per cent. recoveries on the admissions, and a mean annual mortality of 10 per cent.

34. *Influence of age upon the recoveries and mortality.*—According to Dr. Hood's table the recoveries under 25 amount to about three-fifths of the admissions, and to about one-half, between 30 and 65. After 65, as might be expected, the recoveries are greatly diminished, being about one-seventh.

The influence of age upon the number of deaths has also been carefully

* Three classes of patients are received into Bethlem Hospital, namely, curables, incurables, and criminals. It is the first of these classes alone that Dr. Hood includes in his tables. He does this, he says, because the *incurables* have no special interest attached to them. They are simply chronic cases, for whom the hospital offers, if necessary, an asylum for life; and any history of the *criminal patients* is not permitted by government to be published. In leaving out these two classes, however, very little is omitted, for, in the first place, their numbers are comparatively small, and, in the second, there is nothing peculiar in the progress and issue of such cases.

investigated. Dr. Thurnam's conclusion is, that the "mortality of the insane increases in proportion to the age much more rapidly than is the case in the general population." ('Half-Yearly Abstract,' Vol. VII, Report on Psych. Med. *statistics*). In Dr. Hood's tables the mortality, as a rule, increases rapidly with the age. Under 20, it is 4·8 per cent.; between 20 and 25, 2·5 per cent.; between 25 and 30, 3·9 per cent.; between 30 and 35, 4·5 per cent.; between 35 and 40, 8·4 per cent.; between 40 and 45, 5·6 per cent.; between 45 and 50, 7·8 per cent.; between 50 and 55, 7·8 per cent.; between 55 and 60, 8·1 per cent.; and above 60, 16·9 per cent. The mortality as a rule, increases with the age; but under 20 it is higher than in the decennium following, and between 35 and 40 it is much higher than in the years immediately preceding and following: a curious fact, which cannot be easily explained.

35. *Influence of sex on Mental disease.*—The influence of sex upon recovery is supposed to be *very* marked; and it is generally agreed that the probability of recovery is *much* greater in women than in men. But this is not the conclusion which is to be drawn from the experience of Bethlem during the ten years under consideration, for this experience shows that 54·4 per cent. recover among the women, and 53·8 per cent. among the men—a difference in favor of the women, it is true, but far more inconsiderable than that which is usually supposed to exist.

On the other hand, it is admitted that insanity is much more likely to end in *death* in men than in women. The mortality among men, indeed, has been supposed to be nearly double that among women. In Dr. Hood's tables the mortality among the men is considerably higher than among the women, but not to the extent of being double. It is 7·3 per cent. among the men, and 5·8 per cent. among the women.

These facts are of great importance in estimating the effect of treatment in different hospitals, for it must follow that the results will appear more favorable in direct proportion to the number of women admitted.

36. *Causes of death.*—We have only space to present, in conclusion, Dr. Hood's very interesting comparative table of the causes of death in Bethlem Hospital and in the community at large.

Table showing out of one hundred deaths the number from each of twelve classes, and eight distinct forms of disease, in England and Wales, and in Bethlem Hospital.

Causes of Death.	In England and Wales, 1838.	In Bethlem Hospital, 1845-1854.
1. Epidemic, Endemic, and Contagious Diseases,	20·538	4·023
2. Diseases of the Nervous System,	15·016	59·195
Including Convulsions (almost entirely of Infants),	7·879	
" Apoplexy,	1·703	7·471
" Paralysis,	1·505	11·494
" Epilepsy,	·303	1·724
" Diseases of Brain,	·425	38·505
3. Diseases of the Respiratory Organs,	27·484	27·011
Including Inflammation of the Lungs,	5·445	12·064
" Consumption,	17·613	14·367
4. Diseases of the Heart, &c.,	1·075	1·724
5. " Digestive,	5·387	5·172
6. " Kidneys, &c.,	·493	
7. " Uterus, &c.,	1·007	
8. " Bones, &c.,	·635	
9. " Skin, &c.,	·126	
10. Diseases of uncertain or variable seat,	13·389	·057
11. Old Age,	10·781	
12. Deaths by violence,	3 617	2·298
Including Suicide,	·320	2·298

In our report on Psych. Medicine already referred to ('Half-Yearly Abstract,' Vol. VII), the same form of table from Dr. Thurnam's work comparing the causes of mortality of the population at large, and of the Friends' Retreat, will be found. The principal difference in the result of the Retreat and Bethlem will be found in the larger percentage 59·195 as compared with 19·424 of deaths in class 2, *Diseases of the nervous system*.

§ VIII. Judicial Psychology.

The trial and execution, on the 8th of August, 1856, of William Dove, for the murder of his wife, will be in the memory of most of our readers as regards the facts of the case.

The trial and its results elicited very discordant opinions from our psychological authorities. Dr. Forbes Winslow—whose appearance generally in court, and his written opinions on medical legal cases of insanity, are of the most able, and themselves an index of the progress of psychological medicine when compared with similar efforts not ten years ago—has an article in the October number (new series, No. IV) of the 'Psychological Journal' on the case. Dr. Caleb Williams, of York, one of the witnesses examined for the defence, has published an essay 'On the Criminal Responsibility of the Insane,' founded mainly on this trial, and containing as an appendix a most careful report of it. Dr. Russell Reynolds has printed a pamphlet on the same question, 'Criminal Lunatics, are they Responsible?' while Dr. Bucknill, in the October number of the 'Asylum Journal,' devotes one of his leading articles to the consideration of this same trial.

38. *Dr. Forbes Winslow's opinion on the case of William Dove.*—The following letter, which appeared at the time in the 'Globe' newspaper, contains so able a summary of Dr. Winslow's opinion, that we here reprint it:

"23, Cavendish Square, Aug. 1st, 1856.

"My Dear Sir,—Since my interview with you and Mr. Morley, late on Friday night, I have given the subject of our earnest conversation and long discussion, much anxious thought and consideration.

"You will recollect that at that interview I had no hesitation in expressing to you and Mr. Morley my decided and unqualified opinion respecting Dove's legal criminality. I have felt since his trial and conviction no sympathy for him, being strongly impressed with a notion that, if the punishment of death were under any circumstances justifiable, it should be carried into effect in Dove's case. I am bound, however, to confess, that after carefully and dispassionately weighing the additional facts laid before me by Mr. Morley and yourself illustrative of Dove's mental history, I have been induced somewhat to modify my opinion of the case. The words 'defective intellect,' embodied by the jury in their verdict, as justifying their recommendation of Dove to mercy, are not, according to my apprehension, accurately descriptive or expressive of Dove's mental condition.

"His case is one of *imbecility*. If Dove's intellect were only 'defective' or weak in the popular signification of these terms, he ought to be viewed as a responsible person. It would be fatal to the best interests of society if mere 'defect of intellect' were considered in our courts of law as a valid excuse or plea in criminal cases. God forbid that so dangerous a doctrine should ever be propounded by those usually called upon to aid, by their scientific testimony, the administration of justice. If this doctrine be advanced, by what means are we to gauge the strength of the human intellect? Who is to decide upon the psychological test or standard of mental or legal responsibility in such cases? The great mass of criminals have admitted weak intellects, defective understandings, perverted moral sense, and no just recognition of the difference between *meum* and *tuum*. Such persons are, nevertheless, rightly considered as responsible for their actions, and are justly punished when they violate the law.

"I think, however, the case of Dove may safely be removed from the category of healthy, sane, or even 'weak' minded men.

"His conduct through life has been remarkably characteristic of imbecility or idiocy. It appears that his mental infirmity manifested itself in early life, and that those who were engaged in his educational training perceived a remarkable and obvious natural defect in the constitution of his intellect. His actions were not

merely those of a wicked, vicious, or eccentric man, but they evidently sprung out of a stunted, irregularly developed, congenitally defective, and badly organized *brain and mind*.

"If Dove had been made, a short period before murdering his wife, the subject of a commission of lunacy, the question at issue being his competency to *manage his property*, what, I ask, would have been the verdict of the jury? If the fact of his writing letters in blood to the devil, his faith in the supernatural power and predictions of Harrison, the wizard; the tremendous influence which this 'weird' person obtained over him; his cruelties to animals; his having threatened to shoot his father, and afterwards himself; his cutting down his corn when quite green simply because his neighbor had cut his down when ripe; his recklessness of conduct, want of moral perception, his inability in early life to acquire ordinary knowledge, and other facts sworn to in evidence as illustrative of his sad mental state, were laid before an intelligent jury empanelled to try the question of Dove's mental soundness and ability to manage himself and his affairs, can any reasonable doubt be entertained as to the result of the inquiry? Upon evidence considerably less satisfactory and convincing than that adduced in Dove's case, I have seen juries unanimously decide as to the mental unsoundness of individuals. Consider, for example, the celebrated case of Mrs. Cumming. This lady was pronounced insane by a jury, among whom were several county magistrates, simply because she was fond of the society of a few favorite cats, had an impaired memory (no wonderful fact, considering her bodily indisposition and advanced age), and was alleged to entertain a strong aversion to some members of her family who had by force dragged her out of her own house, and confined her in a lunatic asylum. From my knowledge of the conduct of juries, I feel convinced that Dove never would have escaped the verdict of insanity if the question for their consideration had been of a *civil*, and not of a *criminal*, character—one of *property*, not of *life*.

"If Dove's mind was so unsound, as to render him manifestly incompetent to manage himself or his affairs, ought he to be viewed as altogether responsible for any criminal act he might be guilty of? I use the word 'altogether' advisedly; for although I am willing to acquiesce in the wishes expressed by yourself, Mr. Morley, and others, to state, in writing an opinion adverse to carrying into effect the *extreme penalty of the law* in Dove's case, I am bound to say that I shall deeply regret if he were in consequence of his alleged 'defect of intellect' to be exempt from punishment or penal servitude for the remainder of his life. I have no hesitation, however, in asserting that it would be a great and fatal mistake, and a grave act of inhumanity, to hang this wretched man. Considering the conclusive evidence of Dove's mental imbecility, his life, I think, ought not to be forfeited on the gallows.

"The absence of all symptoms of delusion or hallucination renders the case different from those of ordinary insanity with which our courts of law have to deal, and consequently to those not practically cognizant with the insane, the somewhat anomalous case of Dove appears one most difficult of comprehension. The eye of the practical psychological physician views in this case one of *modified responsibility*. As in many instances of indictment for capital crimes, the jury records, with the view of saving life, the merciful verdict of 'manslaughter,' instead of 'murder,' in consequence of the criminal having been impelled to the commission of the crime by great provocation, or been led to imbue his hands in the blood of a fellow-creature, during a moment of intense and uncontrollable mental irritation; so what is designated by lawyers as 'partial' insanity, mental imbecility, or idiocy, when clearly and conclusively established, should invariably be considered as *greatly extenuating circumstances, or conditions of mind which should, in every case, absolve those so afflicted from the extreme penalty of the law*. I hope I have succeeded in clearly conveying to you and Mr. Morley my opinion of this deeply important case. If Dove were positively insane and quite incapable of distinguishing between right and wrong, I would send him to a lunatic asylum for the rest of his days, instead of the hulks or to a penal settlement, but recognizing in his case a *partial degree of responsibility, coexisting with much mental disorder, evidently interfering with the healthy exercise of thought, judgment, and volition*, it would be unjustifiable and cruel to treat him like a perfectly sane man, or as an ordinary and responsible criminal, and consign him to the hands of the public executioner.

"I pray to God that so revolting an exhibition may not be witnessed, and that

your humane and praiseworthy exertions to save this man's life may be crowned with success.

"I remain, yours faithfully,
"FORBES WINSLOW, M.D."

39. *Dr. Bucknill's opinion on the case of Dove.*—"In our opinion Dove's written confession, and his letters which were read in court, entirely disprove the assertion that he was a congenital imbecile. In summing up, the judge referred to the style of the prisoner's communications to his friends, their conciseness, coherency, and grammatical accuracy; and he asked the jury whether they could believe that he was a man who possessed but a glimmering intellect, and who was (as he had been described by the Wesleyan schoolmasters) as near an idiot as could be? Moreover, it appeared, that although he had committed some foolish and reckless acts in the management of his farm, yet, on the whole, that he had managed the farm in a manner of which an idiot or an imbecile would have been incapable.

"The history of the crime itself entirely disproves the allegation of imbecility. The plot of the murder was laid with great precaution and deliberation, indicating no mean degree of calculation and foresight. In the perpetration of his last crime, Palmer was a bungler compared with Dove. Dove indeed labored under the disadvantage that Mr. Morley discovered strychnine in the body of his victim, while Professor Taylor not only failed in his analysis, but declared that success was impossible. And yet we are asked to believe that this man, who obtains and uses his instrument of destruction with a remarkable degree of foresight, cool determination, and skill, that this man is a congenital imbecile—as near an idiot as may be. The only legal dictum which will bear upon imbecility is that of Chief Justice Hale, that 'one who hath as great understanding as a child of fourteen years ordinarily hath,' is responsible for criminal actions. That William Dove had this amount of understanding no one can doubt. Therefore, of the two theories propounded respecting Dove's insanity, we believe that the one of congenital imbecility is quite untenable; and that the one propounded by the counsel for the defence, is the only one having a shadow of probability. That theory was 'that from his youth he had suffered from *moral insanity*, which had developed as his life had progressed, and had ultimately manifested itself in the dreadful crime with which he was charged.' This appears to have been the theory by the medical witnesses, with the additional explanation that the crime itself resulted from an uncontrollable desire to take life. Now it must be admitted, that the chain of circumstances selected from Dove's previous history, and proved in the defence, nearly resemble those acts which some writers upon mental disease have described as proofs of moral insanity; but they also resemble the acts of recklessness, cruelty, and malice, which have been often described as the marks of a depraved boyhood, and which may not only be found in the records of the 'Newgate Calendar,' but in the vicious members of any large school.

"How are such acts to be distinguished as occasioned by disease, or as resulting from depravity? The most trustworthy indication that they are the result of disease is afforded by the manner of their appearance. Dr. Pritchard, the first English writer on Moral Insanity, refers pre-eminently to its causes as an indication of its nature. 'There is often,' he says, 'a strong hereditary tendency to insanity; the individual has previously suffered from an attack of madness of a decided character; there has been some great moral shock, as a loss of fortune, or there has been some severe physical shock, as an attack of paralysis, or epilepsy, or some febrile or inflammatory disorder which has produced a perceptible change in the habitual state of the constitution. *In all cases there has been an alteration in the temper and habits.*' The able and learned inventor of moral insanity was never bold enough to assert that immoral and vicious acts could, by themselves, be accepted as proofs of mental disease; he never went further than to accept them as symptoms of disease, the existence of which he inferred from the nature of its causation.

"If Dr. Pritchard's opinions on the subject of moral insanity had been accepted in our courts of law (which they never have been), the case of Dove could not have been made to tally with them, because the vicious acts proved in his defence were not in any way capable of being referred to any diseased processes, or to any cause

of diseased processes, nor was there at any time any 'alteration in the temper and habits.' He was traced from the age of seven years upwards, as a wilful, passionate, mischievous, and cruel boy. And unless every such boy is to be reckoned in the ranks of the insane, the defence proved too much for its own theory. Moreover, the manner of the crime was wholly inconsistent with the theory of uncontrollable impulse. Had Dove in an excess of rage shot his wife with the revolving pistol with which he often threatened her and himself, or taken her life in any other sudden and impulsive manner, the theory of uncontrollable impulse, founded upon that of moral insanity, might have been propounded to explain the act with some show of reason. But the manner of the act was wholly different: it was proved not only to have been in contemplation, but in preparation for weeks before the catastrophe. Inquiries were made respecting the chances of discovery, and finally, when the poisoning process was commenced, five times was the horrible drug given, at intervals of a day or so, and in doses only sufficient to disarm suspicion, by producing the resemblance of disease. The friends of the unhappy woman were written to, to induce them to expect her death as the result of disease; and then the finishing dose was given, and the wretched victim of his hate, expired in the dreadful agonies of strychnine tetanus. This calculating, deliberate, and prolonged arrangement of his crime, is as inconsistent with the theory of uncontrollable impulse, as it is with that of imbecility. The circumstances of the crime themselves proved, not only mental capacity and deliberate forethought, but they also proved the consciousness of wrong doing, and the fear of punishment.

"If the criminal laws of this country are not based upon absurdities, are not the shadow of a sham, and rotten at the core, the cruel and dissolute wretch who destroyed his wife by the inconceivable tortures of six doses of strychnine, richly deserved to feel the weight of retributive justice."

40. *Dr. Caleb Williams's opinion on the case.*—We make the following extracts from Dr. Caleb Williams's essay on the 'Criminal Responsibility of the Insane.'

"With the evidence adduced from various sources there is no difficulty in arriving at the conclusion that Dove was a man of unsound mind; and that his insanity was in *kind* and *degree* such as to deprive him, on very many occasions in the course of his life, of the power of self-control, and to subject him to the influence of propensities and impulses alike dangerous to himself and to others. In order to establish the fact that a man is insane—that he is of unsound mind—that he is not responsible for his actions, it is not necessary to prove the existence of any 'illusion, or erroneous conviction impressed upon the understanding,' because insanity, and homicidal insanity itself, is often characterized merely by a perversion of the moral faculties, the feelings, the emotions or affections; and this disordered state of the moral faculties may exist without any obvious disturbance of the intellectual functions. Indeed, as I have stated in the remarks on the case of Hill, 'there are madmen in whom it is difficult to discover any trace of hallucination, but there are none in whom the passions and moral affections are not disordered, perverted, or destroyed.' And this condition of the moral faculties incapacitates the individual from taking part in the common affairs of life without great risk to those around him; it deprives him of his free agency, and frequently renders him as irresponsible for his acts as the maniac who stabs his neighbor under a confirmed delusion.

"Now, under any of the circumstances—in any of the conditions which are here described, from the mildest to the severest form of mental unsoundness, can it be asserted that the person so affected is fully responsible for his acts?—that punishment should be meted out to him as to ordinary criminals? I am free to admit that insanity does not, in every case, and under all circumstances, annihilate responsibility. It is one of the great objects of those who have the care of lunatics to train them by a judicious system of moral management—to exercise self-control, and thus to enable them to repress and restrain those ebullitions, which in common life are often so fearful and fatal in their consequences. And in this way to impress them as much as may be with the feelings of responsibility, and to quicken their perceptions of right and wrong.

"In most forms of insanity, however, the moral sense, the perception of right and wrong, is so far obscured or perverted as greatly to lessen the culpability of the

party; and in some forms of mental disorder the moral perception is so completely destroyed that no power of distinguishing right from wrong remains, and in which the individual ceases altogether to be a responsible agent. The degree of responsibility in the same person differs greatly according to circumstances,—such as the actual condition, physical and mental, of the person at the time of the commission of the crime; the amount and nature of the causes which led to it. And hence the degree of responsibility can only be determined by a careful inquiry into the medical and moral history of the accused, the circumstances which preceded, accompanied, and followed the criminal act.

"Shades of guilt and degrees of culpability are often points at issue in Courts of Justice, as when a charge of murder is brought down to manslaughter. It is the more remarkable, therefore, when a plea of insanity is urged; the witnesses are compelled to adhere to the old formula, a *consciousness of right and wrong*, and to give a categorical answer to the question, whether the individual had a consciousness of right or wrong at the time he committed the particular act with which he is charged.

"A very superficial examination of this subject, and a very slight experience in such cases will show that this is a very imperfect test of responsibility, and that it would tend greatly to further the ends of justice, and to secure the conviction of real offenders, to revise these laws, which might long ago have been considered obsolete. The tenacity with which our courts of law cling to them affords a striking illustration of the correctness of those words of Bentham:—'Lawyers delight in plodding on in paths which reason has never trodden, or having trodden has forsaken.'

"These views of responsibility have been spoken of as refined speculations, and stigmatized as theories and notions which were inapplicable to the realities of life, and altogether useless in practice. The answer to this is—that they have been held by men who stood in the first ranks as literary and scientific characters, who had large opportunity of observation, and many of whom had acquired a more than European reputation by the vigor of their understandings and the value of their writings."

41. *Recapitulation of Dr. Russell Reynolds' view of the criminal responsibility of the Insane.*

- I. Sanity of mind is the correct appreciation of things as they are, viz.:
 - a. The recognition as truth of what exists as fact.
 - b. The recognition of the obligations of right and wrong.
 - c. The recognition of the greatest good as the strongest motive.
- II. The proof of sanity is the concurrence of the individual with the race or people to whom he belongs: because
 - a. The general belief of humanity is the correct statement of—
 1. What are facts.
 2. What are duties.
 - a. In the abstract, and
 - b. In regard of social relations.
 3. What are advantages.
 - b. The sane man is supposed to desire truth, duty, and advantage.
- III. The sane man is responsible for
 - a. The condition of his mind in regard of
 1. Truth or facts.
 2. Duties or obligations.
 - a. To God (morality).
 - b. To his fellow-man (social obligation).
 3. Advantages (choices).
 - b. The determination of his actions, because
 1. It is in his power to know.
 2. His will is free to choose.
- IV. Insanity is the absence of those qualities which constitute sanity, resulting in
 - a. The non-appreciation of facts.

- B. The non-recognition of duty.
- C. The non-perception of advantage.
- V. The proof of insanity is the nonconcurrence of the individual with the race.
 - A. In regard of facts (delusions, illusions, &c.).
 - B. In regard of duty (loss of moral sense).
 - C. In regard of advantage (impulsive conduct).
- VI. The responsibility of the insane.
 - A. For the condition of his mind.
 - 1. The insane man is responsible for insanity which is his own fault (drunkenness, vice, temper, &c.).
 - 2. He is not responsible when it arises from
 - a. Physical unavoidable disease.
 - b. Psychical unavoidable disturbance.
 - B. For his actions.
 - 1. The insane man is responsible
 - a. When the action has no discoverable relation to the derangement.
 - b. When there is no evidence of insanity beyond that of the act committed.
 - 2. He is not responsible
 - a. When the actions result directly from the delusion.
 - b. When the whole tenor of the mind is deranged.
 - C. He is as responsible as the sane when his insanity is his own fault.
 - D. He is not equally responsible under any other circumstances.
- VII. The treatment of the insane.
 - A. When non-criminal is
 - 1. To protect society by his restraint.
 - 2. To place him in the most favorable circumstances for improvement.
 - B. When criminal,
 - 1. He is to be proved insane.
 - a. By the distinction of sanity from insanity.
 - b. By the distinction of insanity from pretended madness.
 - 2. His responsibility is to be discovered,
 - a. By an examination of the cause of his insanity.
 - b. By a recognition of its relation to the act.
 - 3. His degree of responsibility is to be affixed.

[*Note.*—Since this Report was sent to the printer's the '*Report of Her Majesty's Commissioners appointed to inquire into the state of Lunatic Asylums in Scotland*' has been presented to both Houses of Parliament by command of Her Majesty. Our limits do not allow us at present to do more than notice its appearance. Our readers will probably have observed that the subject has already attracted considerable notice in Parliament, and that the Lord Advocate for Scotland has brought in a Bill based on the facts brought to light in this Report, which we trust may result in affording to the insane paupers in Scotland that protection which they now apparently stand sadly in need of.]

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EDITED BY
W. H. RANKING, M. D., CANTAB.,
PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL,

AND
C. B. RADCLIFFE, M. D., LOND., L.R.C.P.,
PHYSICIAN TO, AND LECTURER ON MATERIA MEDICA AT, THE WESTMINSTER HOSPITAL.

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ABSTRACT OF THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*A new method of investigating the Effect of Meteorological Changes upon Human Life.* By Dr. JAMES MORRIS.

(*Lancet*, July 18, 1857.)

BEFORE entering into the details of the present investigation, it is necessary to present a few general considerations in elucidation of the method actually employed, which may, perhaps, be called the "Method of Differences." Let the total mortality of London be compared to the depth of water in the sea; this we may regard as influenced by various causes, but of these the most important are of a permanent character, such as habitations, food, air, soil, level, moral condition, &c.; while the effect of occasional or cyclical conditions—as cold, heat, wind, rain, moisture, drought, &c.—may be likened to the tides and waves on the surface, high or low, gentle or tempestuous, but never affecting permanently the depth of water. Waves and tides cannot be studied by observations on the mean depth of the ocean, neither can the effect of meteorological phenomena on mortality be estimated by the comparison of mean quantities. It was to study these tides and waves affecting the surface of the mortality, that Dr. Morris constructed three years ago the tables, to give an account of which is the object of this paper.

As in physics, when a movable body is acted on by various forces, each produces its own effect independently of the others, and however complicated be the path of the moving body, yet is the effect of each force precisely in accordance with known laws; so, although the causes determining the amount of mortality may be very numerous and recondite, yet the effect of each should be exerted in accordance with laws not the less absolute because they are less known. The causes of the rise and fall of the wave of death, doubtless at times exhibit a combined effect, at times neutralize each other by acting in opposite directions; but as a cause constantly produces its own effect, whether that effect be neutralized or not, we should, in order to discover the amount of effect due to any special cause, note the apparent effect following that cause on a large number of occasions, and the mean of these will be the quantity of its real effect. If the scale of our calculations be sufficiently extensive, disturbing causes will neutralize one another.

Taking the weekly tables of the Registrar-general, it would be possible, by noting the number of deaths occurring in a large number of weeks, each following some given meteorological condition, and comparing the mean of the numbers so obtained with the average mortality, to arrive at an approximation to the effect produced by the given condition; but, except in the case of diseases, which contribute but a very small proportion to the weekly mortality, and where the smallness of the numbers makes the results of less value, the figures to be dealt with soon become so unwieldy, and the corrections necessary on account of increase of population so difficult, as to afford a ready explanation of the fact, that no calculations of the kind have been made. In order to

obtain intelligible and trustworthy results, it is necessary to extend our basis over a lengthened period; but it is not enough to set down side by side the mean mortality and the mean meteorological condition, and, although in this way results of some value have been, and may be obtained, still for most purposes more is required. The long period must be divided into portions, the smaller and more numerous the better; the meteorology and mortality of each must be registered; such data we have in the weekly returns. Now, in tables of this nature, any effect produced can only be exhibited in the form either of an increase or a diminution of the weekly mortality. Let us then tabulate these changes occurring in the mortality from week to week, denoting increase by the sign +, and diminution by the sign —. Resuming our metaphor, these numbers, with their signs prefixed, denote the rise and fall of the death-wave, the depth of the water, the actual mortality being left out of account. Let us classify the weeks according to some meteorological character, when simple algebraic addition immediately offers us the means of combining the effects produced, divide the result by the number of weeks in which our previously selected condition has occurred, and, if the basis of our calculations be wide enough, the quotient will indicate the amount of the effect produced, while its sign will indicate its kind.

By this method no comparison is ever instituted, except between weeks which are in immediate succession; and the correction for increase of population, which would otherwise be very troublesome, becomes a simple matter. The following tables have been extended over a period of fourteen years, 1840–1853 inclusive, containing 730 weeks; they have reference only to the effect produced by continued temperature, and by changes of temperature upon the total mortality. Those showing the effect of the same agents upon the zymotic class and its members have been completed for the same period; the field is very extensive, and but a little corner of it has as yet been occupied. For brevity's sake, let us call the increase or diminution of mortality from week to week the “death-change.” It will be evident, after a moment's reflection on the subject, that the continuance of a certain temperature, for instance, may produce an effect upon the mortality which will not all be exhibited in the death-change which immediately succeeds it, but may be spread over the succeeding death-changes for a very considerable period; and hence it has been necessary to take account of the fluctuations of mortality through a period of four weeks, and even then the tables show, in many cases, that the whole of the effect has not passed away; but it is now desirable to postpone further explanations, and to submit the first table of results, in which the calculation has not reached its final and more intelligible stage, which follows below:—

Table showing the effect upon the total mortality of London caused by various temperatures.

Weekly mean temperature.	Number of occurrences.	First death change.	Second death change.	Third death change.	Fourth death change.	Remaining excess or defect of mortality after four weeks.
° °						
20 to 25	1	+ 69	— 131	— 22	— 181	— 265
25 “ 30	13	+ 704	— 338	— 980	— 781	—1395
30 “ 35	38	+1805	— 614	—1734	— 185	— 728
35 “ 40	77	+2851	—1595	— 326	—1140	— 210
40 “ 45	123	— 411	+1359	+ 436	—1275	+ 109
45 “ 50	138	—2980	— 900	+1196	+ 261	—2423
50 “ 55	89	—1341	+1250	+ 900	+2873	+3682
55 “ 60	130	—1818	— 557	+ 604	+1227	— 544
60 “ 65	100	+1047	+1526	— 474	— 774	+1325
65 “ 70	19	+ 742	+ 445	+ 517	+ 124	+1835
70 “ 75	2	— 198	+ 50	+ 162	+ 194	+ 208
		+ 477	+ 495	+ 279	+ 343	+1594

The first column contains merely a division of the weekly mean temperatures into fasciculi of five degrees (Fahrenheit), an arrangement adopted merely from motives of convenience. In the second column stands the number of weeks whose mean temperature falls in each fasciculus; and here, in passing, we may notice a curious fact, that the mean temperatures of fewer weeks fall between 50° and 55° than in either of the two preceding or the two succeeding fasciculi. This would seem to be due to the rapid approach of the sun about the time of the vernal equinox, and his correspondingly rapid departure of the autumnal, dependent on the form of the ecliptic, and the great angle which it makes with the equator at the points of intersection. The third column is occupied by numbers formed by combining, by algebraic addition, the death-changes occurring at the termination of all the weeks which form the fasciculus to which they belong. In order to find the effect to be expected in any single week, these numbers must be divided by the corresponding number in the previous column. In order, however, to avoid fractions, and on account of the magnitude of disturbing causes—as, for instance, cholera, influenza, and the irregular registration of inquests—it has appeared desirable to leave this table in its present form. The fourth, fifth, and sixth columns contain the combined death-changes occurring exactly one week later than those in the column immediately preceding each of them. The last column is formed by addition of the numbers on the same line in the four previous columns. It shows whether and by how much the mortality of the whole four weeks was above or below that of the weeks which formed in each line our starting point. In such a table, a steady increase of mortality during the period which forms the basis of our calculation, whether it be due to augmented population or to any other cause, shows itself in an excess distributed among the positive quantities, and a defect among the negative; in the third, fourth, fifth, and sixth columns the numbers whose sign is + are together greater than they should be by about 200, while those whose sign is — are deficient to the same extent. The exact amount of this error is shown by the number at the base of each column. In the last column the same fault occurs to a fourfold extent, the error here being the sum of the other four.

So far it has been necessary to enter into a somewhat tedious explanation of the method of procedure employed, which, however, has been rendered as brief as possible. Before proceeding to interpret the results, it only remains to add, that at every step the calculations have been subjected to such proofs as almost to preclude the possibility of arithmetical errors. After applying the correction just referred to, for increasing population, the mean results may, I think, be most intelligibly stated as follows, fractions being rejected, and the nearest whole numbers adopted.

I. As calculated upon an average of 129 weeks (see the first four lines of the previous table), the effect due to a mean weekly temperature below 40° is to increase the total mortality of London in the following week by 41, at the termination of which a diminution of 22 occurs, still leaving, however, an excess of 19. At the end of this second week a further diminution of 25 occurs, thus bringing the deaths 6 below the average of those which formed our starting point. Another week shows a further depression of the mortality by 19, leaving, where our calculations cease, a deficiency of 25 during the period elapsed.

II. An examination of 480 weeks (see fifth, sixth, seventh, and eighth lines of table), having a mean temperature of from 40° to 60° , together with a comparison with and among their successors, shows that the first effect of such moderate temperature is to diminish the weekly mortality by 14; three weeks later this deficiency is a little more than made up.

III. The effect of high temperature may be judged of from the results following 121 weeks, having a mean temperature of 60° and upwards (see last three lines of table). An average increase of 11 occurred in the mortality of the following week, in the next a further increase of 14, after which the effect began to die away, leaving, however, where the calculations terminate, an excess of 22.

A short table, which will be readily understood by those who have read the

foregoing with attention, will enable the eye to take in the above results at a glance.

Base of calculation.	Mean temperature.	First death change.	Second death change.	Third death change.	Fourth death change.	Remaining effect.
129 weeks	Below 40°	+41	-22	-25	-19	-25
480 weeks	40° to 60°	-14	+ 2	6	+ 7	+ 1
121 weeks	60° and upwards	+11	+14	+ 1	- 4	+22

Before proceeding to comment on these results, let us add the following:—

Table showing the effect produced upon the total mortality of London by rise and fall of temperature.

Changes of the weekly mean temperature.	Number of occurrences.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Excess or defect of mortality after four weeks.
+16 to +18	1	+ 106	- 209	- 36	+ 18	+ 88	- 33
+14 " +16	1	- 9	- 238	- 44	+ 22	- 24	- 293
+12 " +14	2	- 124	- 247	+ 12	- 93	- 33	- 485
+10 " +12	9	+ 698	-1039	- 509	+ 16	- 66	- 900
+ 8 " +10	26	+1361	-2239	+ 513	- 233	- 449	-1047
+ 6 " + 8	37	+ 708	-1263	- 817	+1130	+ 56	- 186
+ 4 " + 6	61	+ 485	- 433	- 668	- 744	+ 34	- 460
+ 2 " + 4	101	+ 381	-2085	+1753	- 511	+1089	+ 627
0 " + 2	116	+2941	-2633	+ 25	-1271	+ 119	- 819
0 " - 2	136	-1203	+1419	- 76	+1482	- 46	+1576
- 2 " - 4	99	-2072	+1891	-1133	+ 870	- 166	- 610
- 4 " - 6	72	- 899	+2326	- 89	+ 87	+1353	+1604
- 6 " - 8	43	- 154	+1081	+ 911	+ 171	- 333	+1676
- 8 " -10	17	- 585	+1613	+1229	- 689	- 281	+1287
-10 " -12	5	- 964	+ 920	- 548	+ 11	- 89	- 670
-12 " -14	4	- 193	+ 765	- 244	+ 251	+ 134	+ 713
		+ 477	+ 495	+ 279	+ 343	+ 386	+1980

In the first column we have a classification of the changes occurring in the mean temperature from week to week; increase (denoted by the sign +) forming the upper part of it, and diminution (as indicated by the sign -) the lower; they are divided arbitrarily, for convenience sake, into fasciculi, each embracing two degrees of increase or diminution of temperature. The second column shows the number comprised in each fasciculus, 730 in all. The other columns are exactly analogous to those in the previous table, with this difference, that the first of them (third column), is formed from death-changes exactly simultaneous with the heat-changes noted in the first column. The numbers denoting the correction required for population stand below.

Let us endeavor to state the chief results in a more easily intelligible form, applying the correction, and reducing, as before, thus:—

Number of changes of weekly mean temperature.	Average amount of ditto.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Remaining effect.
354	+3°.88	+18	-27	...	-5	+1	-13
376	-3°.65	-17	+26	...	+5	-1	+13

Or, more expanded, as follows:—

Number of changes of weekly mean temperature.	Average amount of ditto.	Death changes occurring simultaneously.	Death changes after one week.	Death changes after two weeks.	Death changes after three weeks.	Death changes after four weeks.	Remaining effect.
137	+6°.97	+23	—36	—12	+1	—3	—27
217	+1°.93	+15	—22	+ 8	—9	+4	— 4
235	—1°.84	—16	+15	— 5	+9	—1	+ 2
141	—6°.67	—21	+47	+ 8	—3	—2	+29

The above conclusions may be verbally stated, thus:—

I. That on 354 occasions on which the mean temperature of some weeks exceeded that of its immediate predecessor, the average amount of such excess being 3°.88, the mean result was as follows: that there occurred, simultaneously with the increase of temperature, an increase in the deaths to the extent of 18; after one week this was more than counterbalanced by a decrease of 27, which was maintained, and even somewhat increased, leaving, after the lapse of four entire weeks, the mortality still 13 below the level at the beginning.

II. That on 376 occasions on which the mean temperature of a week was less than that of its predecessor by an average amount of 3°.65, the total mortality underwent simultaneously a diminution of 17; that after one week an increase of 26 occurred, leaving the mortality 9 above the average; that at the termination of four weeks this excess amounted to 13.

III. In the second table we see that the greater changes of temperature are, as might be expected, followed by a greater effect, and not only so, but it is also continued over a larger number of weeks. Thus 141 falls of the weekly mean temperature, averaging 6°.67, were causing on an average, after the lapse of four entire weeks, an excess of 29 in the weekly mortality; while, on the other hand, 137 rises, averaging 6°.97, were producing a corresponding favorable effect.

The above numbers, being but approximations, may be regarded as expressing the augmentation or decrease caused upon every 1000 deaths, since the mean mortality of the whole 730 weeks but little exceeds 1,000 (being exactly 1012.47).

The first series of tables should enforce upon us the necessity of preserving a medium and steady temperature in the rooms of the sick and feeble, where a thermometer is not yet so common an appendage as it ought to be. Be it remarked, that it is not the low temperatures alone which are to be dreaded, though the immediate fatality which they produce is very great; but high temperature is seen to be even more pernicious, though the evils resulting from it have in some measure escaped attention, from the fact that they are diffused over a longer interval of time. Let us not fail to observe that after three, and still more after four weeks, the balance is greatly in favor of the low, as compared with the high, and even with the moderate temperatures.

It is a curious result of the second division of our calculations, that the first effect of a rise or fall of temperature, viz., that which occurs simultaneously with it, seems to be exactly the reverse of that which has been generally believed, it may be for want of sufficient care in distinguishing between high temperature and rising temperature, and low temperature and falling temperature respectively; or, as deaths are not registered till three or four days on an average after their occurrence, this may account in part for the result—scarcely for the whole. To decide this matter would require a registration of deaths on the days to which they belong, to which calculations on this principle might be very advantageously applied. Still the chief effect of comparative cold remains as generally believed.

ART. 2.—*On Adulteration of Bread as a cause of Rickets.* By Dr. SNOW.*Lancet*, July 4, 1857.

"In 1839, having occasion to see a considerable amount of practice amongst the poor of London," says Dr. Snow, in a paper to which we would wish to direct especial attention, "I was very much struck with the great number of cases of rickets. The complaint was shown chiefly in the bones of the leg, causing an outward curvature of the tibia and fibula; in children in their second and third year, it seemed almost the rule, and might be observed in the streets and the parks, as well as amongst children brought for advice. The complaint, moreover, was not by any means confined to the poor, but affected the children of the middle classes to a considerable extent.

"The usual causes to which rickets are attributed are of a somewhat general nature, such as vitiated air, want of exercise and nourishing food, and a scrofulous taint. These explanations, however, did not satisfy me, as I had previously seen a good deal of practice in some of the towns in the north of England, where the overcrowding and the other evils above mentioned were as great as in London, whilst the distortion of the legs in young children was hardly present; moreover, I noticed that the most healthy-looking and best-nourished children often suffered most from curvature of the bones of the legs, owing to their greater weight; and I afterwards found that this complaint was quite common in the villages around London as well as in the metropolis itself.

"The bones owe their hardness to phosphate of lime, which exists ready formed in many articles of food, and only requires to be assimilated, whilst in rickets the phosphate of lime in the bones is known to be deficient; and therefore it seemed extremely probable that the want of this earthy salt in the food of the infants of this metropolis was the chief cause of the soft state of the bones. My attention was naturally directed to milk, which contains one chief supply of phosphate of lime, and which is somewhat scarce and dear, and not of the best quality in London; but I immediately recollected that in some of the mining and manufacturing districts in the northern counties of England milk was scarcely used at all in the families of the operatives, and yet I had hardly seen a case of curvature of the legs from rickets. On reflecting on the subject of bread, however, there seemed to be something which might explain the prevalence of this complaint in London. In the northern counties, where coals are cheap, it was the universal custom for every family to bake their own bread, and I believe still remains so; whilst in the south of England it is as much the custom to buy bread from the baker. Now, the bakers, so far as I have examined, all put alum in their bread, whilst this is never done in domestic practice, and the flour dealers rarely adulterate the flour with this substance. They are liable to a heavy penalty for adulterating flour, but the law is never enforced against the bakers. I have never examined a specimen of flour which contained alum, or a specimen of baker's bread which did not contain it.

"When my attention was first turned to the subject of rickets, I thought it likely that the sulphuric acid of the alum would decompose the phosphate of lime of the wheat, and form sulphate of lime, which would not be available as nourishment for the bones; and I formed an intention to investigate the question both chemically and statistically; but this intention was long postponed, on account of other engagements and inquiries. In the meantime, and without any regard to the question of rickets, Liebig has inquired into the action of alum in bread, and his investigation will justly have more weight with the reader than any inquiry of mine. He says: 'Since phosphoric acid forms with alumina a compound hardly decomposable by alkalies or acids, this may perhaps explain the indigestibility of the London bakers' bread, which strikes all foreigners.'

"It is evident from the above passage that Liebig has ascertained that alum decomposes the phosphate of lime of wheat, and it is not likely that the bones *would be able to nourish themselves with this salt out of phosphate of alumina and sulphate of lime*; and where bakers' bread forms the chief and almost the

only article of food, as it does amongst the children of the working classes in London any many other towns, one might expect the bones to be ill-nourished, as regards their earthy and hardening material. This appears to be the actual fact, as far as I have been able to extend my inquiries. The subject is capable of being decided by an exact numerical investigation, but I have thought it better to publish my inquiry in its present imperfect state, than to wait till I should be able to make such a complete research as I could wish, more especially as, by directing the attention of the profession to the question, it may be earlier decided. I expected to be able to contrast some of the large institutions containing young children in this metropolis with each other; but, so far as I have inquired, they are all supplied alike with bakers' bread containing alum. So far as I have been able to learn, rickets are not common at present in the towns in the north and west, where homemade bread is chiefly used; and I was lately told, that in one town in Cornwall, where the people make their own bread, this complaint is almost absent; whilst in a town a few miles off, where bakers' bread is consumed, the complaint is extremely common; but as my inquiries have been only of a colloquial nature, I hesitate to mention places and persons. If it could be obtained, perhaps a return of the number of cases of rickets in the children under four years, as compared with the whole number, which are brought to the dispensaries, in towns where respectively the people buy chiefly flour or ready-made bread, would best help to decide the question.

"It does not follow, if my conclusions are correct, that every child eating bread adulterated with alum ought to have rickets, or that every child fed with good bread ought to be free from the complaint; for, on the one hand, the other articles of food may often supply sufficient phosphate of lime without that of the bread, and, on the other hand, derangement of the digestive and urinary functions may prevent the phosphate of lime being assimilated when present. What we might expect, however, would be precisely what we observe—that rickets would be much more common in the children of the working classes fed almost entirely on bread than in those who have a greater variety of food. It can also be explained how the bones ultimately become hard from the gradual accumulation of the scanty supply of phosphate of lime derived from milk, potatoes and other articles of food, whilst that which ought to be supplied in the bread is still withheld.

"If the deformity in the bones of the legs does not proceed too far, it has a great tendency to diminish, and even disappear, as the children grow up; and the artificial support which is afforded by iron instruments and splints, both in the various hospitals for deformities, and under the advice of private medical men in London, diminishes very much the amount of permanent deformity which would otherwise be met with.

"In my examinations of bakers' bread I have been much struck with the apparent universality of the practice of using alum, and with the large quantity employed—a quantity between twenty and thirty times as great as that usually stated by authors. I have met with alum, not only in the ordinary bread sold by bakers, but also in captains' biscuits, and in the so-called farmhouse bread; and I was somewhat surprised to find that the high-priced bread, sold in the fashionable neighborhood to the west of Regent Street, contained more alum than the cheap bread sold in many of the poorer districts. I found that the bread supplied to me last autumn contained 10.13 grains of alum in 500 grains—i. e., 561 grains, or more than an ounce and a quarter in the 4 lb. loaf; whilst some bread obtained from a very noted baker contained 11.37 grains in the 500 grains, or nearly an ounce and a half in the 4 lb. loaf. The following is a brief account of the analysis of the latter bread: 500 grains, being carefully dried at the temperature of 100 Fahr., lost 128 grains of water, or more than one-fourth. Being carefully incinerated in a crucible, the ashes weighed 5.85 grains. The ashes yielded alumina, which, being washed, dried, and ignited, weighed 1.2 grain, representing 11.37 grains of crystallized alum; with chloride of barium, they yielded 1.4 grain of sulphate of baryta; and with the nitrate of silver, 6.7 grains of chloride of that metal, representing 2.8 grains of common salt.

"Dr. Hassall and some other authors have very properly pointed out that

the only safe way to seek for alum is to incinerate the bread, and examine the ashes; but many writers go on repeating the statement that alum may be found by digesting the bread in distilled water, filtering, and applying tests to the water. In this way seldom more than a trace of alumina can be detected, even when the bread contains a large quantity; but it is probable that many persons take this short and easy method of examining it, and it is probably in a great measure owing to this circumstance that the bakers continue to use alum with so much impunity. An instance came under my notice not many months ago where a baker expected, with the utmost confidence, to have a satisfactory certificate to lay before the committee of a club-house respecting his bread, although it contained a great quantity of alum.

"A probable way to break through what seems the universal practice of bakers to adulterate bread, would be for the committees of the public hospitals and the guardians of the poor to oblige the bakers who contract to supply their respective institutions to furnish an unadulterated article. No one pretends that alum is either nutritious or wholesome; and if the loaves without alum should cost a little more, owing to their carrying less water, no one can doubt that as much nutriment would be obtained for a given sum as under the present system."

ART. 3.—*How to render Cows' Milk a more suitable Food for Children.* By Dr. GUMPRECHT, of Hamburg.

(*Journal für Kinderkrankheiten*; and *Dublin Hosp. Gaz.*, Oct. 1, 1857.)

Dr. Gumprecht prefaces his observations by remarking upon the fact that milk often disagrees with children, producing indigestion, acidity, flatulence, colic, diarrhoea, &c. &c. In consequence of this, it has been proposed to improve it by the addition of water and sugar of milk, which experience has proved to have imperfectly attained the object in view. Reflecting on the effect of salt in rendering the food for adults not only more palatable, but also more digestible, increasing the activity of the glands of digestion, and rendering the albuminous substance and fat soluble in the fluids of the stomach, Dr. Gumprecht was led to the idea of adding salt to milk, both for weaned and older children, with the result of not only preventing the derangement of digestion, but moreover of removing them in cases where they previously existed. No author who has written on the nutriment of weaned children has spoken of this most useful addition to milk; but a Dutch physician mentioned to Dr. Gumprecht, in conversation, that in his practice in Holland he had frequently added a little salt to milk for weaned children with most satisfactory consequences.

In the rural districts of Holland, salt is frequently added to the fodder for pigs and cattle, for the purpose of preventing diarrhoea, which so often exists in consequence of imperfect digestion, and this suggested the adding salt to milk, not merely for healthy children, but for strumous children and such as are affected with worms. Dr. Gumprecht quotes a passage from L. Nussdorff's "*Lehrbuch der Gesundheitspflege*," 1856, on the importance of salt in the nutriment of man and animals.

With regard to the quantity of salt which should be added to the milk, it must depend on the age of the child. To render cows' milk like human milk, it should be boiled and skimmed, and a little sugar of milk and salt added.

ART. 4.—*The Injurious Effect of Narcotics upon Children.* By Dr. T. HERBERT BARKER.

(*Journal of Public Health*, Jan., 1857.)

These excellent remarks occur in a well-written paper on "Nursery Government in its Sanitary Aspects."

"When," says Dr. Barker, "the rules of an infantine health are disregarded by mothers and nurses: when food wrong in quality or excessive in quantity is habitually given; when cleanliness, sufficient repose, gentle exercise and pure air have been neglected, we must expect the infant constitution to suffer. Irritation, wakefulness, a bloated or emaciated habit of body and peevishness of

temper will probably appear as the results of such mismanagement. And now, as one error leads to another, the inexperienced mother or nurse, having first produced disease, proceeds to exasperate that disease by the most mischievous quackery—in short by ‘drugging’ the infant. Its cries are distressing, it will not sleep; it is evidently suffering pain;—the pain must be allayed—the child must be put to sleep;—but what are the means to be used? Nature calls loudly for help and receives—poison! An ignorant neighbor informs the distressed mother of the wonderful virtues of a certain elixir—‘Godfrey’s Cordial,’ ‘Dalby’s Carminative,’ ‘Poppy tea,’ ‘Diocodium and peppermint,’ or some other cloak for opium. In one respect these destructive nostrums fulfil their promise. The cries of the child are effectually ‘stilled;’ for, in many cases, he is soon silent—in the grave! Let it not be thought that we write too strongly of this murderous practice. I have seen even in the course of my own experience in a rural district, too many instances of the injurious effects of narcotics upon children; but it is in the manufacturing districts that the practice of ‘drugging’ is carried on in a wholesale manner. On this sad topic the Registrar-general has written as follows:—

“How pitiful is the condition of many thousands of children born into the world! Here, in the most advanced nation in Europe, in one of the largest towns of England—in the midst of a population unmatched for its energy, industry, and manufacturing skill—in Manchester—the centre of victorious agitation for commercial freedom—aspiring to literary culture—where Percival wrote and Dalton lived—thirteen thousand three hundred and sixty-two children perished in seven years, over and above the mortality natural to mankind! These ‘little children’ brought up in unclean dwellings and impure streets, were left alone, long days, by their mothers to breathe the subtle sickly vapors—soothed by opium, a more ‘cursed’ distillation than ‘hebenon,’ and when assailed by mortal diseases—their stomachs torn, their bodies convulsed, their brains bewildered, left to die without medical aid, which, like hope, should ‘come to all.’—the skilled medical man never being called in at all, or only summoned to witness the death and sanction the funeral.”*

“Such remarks, I trust, are only required by the most ignorant mothers and nurses in the lowest grades of society. Yet I beg leave to intimate that such drugs as those referred to, may sometimes be found in the possession of nurses in the higher classes of society. The mother who wishes her infant to grow up with ‘a sound mind in a healthy body,’ cannot guard too strictly against the use of poisons.”

ART. 5.—*Revaccinations in the Prussian Army during 1856.* By Dr. —.

(*Berlin Med. Zeitung*, No. 14, 1857; and *Med. Times and Gazette*, June 6, 1857.)

During the year 1856 there were either vaccinated or revaccinated 44,222 individuals. Among these—

Cicatrices of prior vaccinations were plain in	36,668
The cicatrices were indistinct in	5,157
There were no cicatrices in	2,397
	<hr/>
	44,222

The results of the present vaccinations were

Regular in	28,785
Irregular in	5,777
No effects in	9,660

The vaccination was repeated in the 9,660; with effect in 2,531, without effect in 7,129.

The number of vesicles produced was as follows:—

1 to 5 in	14,178
6 to 10 in	9,275
11 to 20 in	7,004
21 to 30 in	859

* Ninth Annual Report of the Registrar-general of Births, Deaths, and Marriages in England. 1849.

Among the soldiers revaccinated with success in 1856, or in former years, there occurred during 1856, 2 cases of varicella, 4 of varioloid, and 1 of variola.

Thus, of 44,222 persons vaccinated during 1856, in 28,785 (and including those vaccinated with success after a first failure, 31,316), the pustules pursued a completely regular course. That is to say, the vaccinations succeeded at the rate of 65 per cent., or, including the repetitions, 70 per cent. This proportion has of late been on the increase; for during the two immediately preceding years it was 63 per cent., or 69, including successful repetitions.

Throughout the entire army during 1856 there occurred 21 cases, 5 being examples of varicella, 13 of varioloid, and 3 of true variola. Among the soldiers who had not been revaccinated, varicella occurred in 1, and varioloid in 6; among those who had been revaccinated, but without effect, there were 2 cases of varicella, 4 of varioloid, and 2 of variola; and among those revaccinated with success there occurred, as already stated, 2 cases of varicella, 4 of varioloid, and 1 of variola. No case throughout the entire army terminated fatally; and all the cases, with the exception of one, were very slight.

ART. 6.—*On the connection of Atmospheric Vicissitudes with Epidemic Disease.*
By Dr. F. POZNANSKI, of Wilna, Russia.

(*Dublin Hospital Gazette*, Sept. 15, 1857.)

Dr. Poznanski's paper was communicated to the section of Physiological Science at the last meeting of the British Association. Its substance is contained in the following extract:—

"The natural agents are salutary or noxious, according as they serve to confirm or annihilate the normal state of individuals. If modifications of natural agents, even those which are proper to the seasons, produce generally morbid predispositions, it is impossible for it to be otherwise, when the natural agents offer extraordinary modifications. In fact, whenever such modifications occur, there is a general predisposition to a special sort of illness. This predisposition—an intermediate state between health and sickness—is always in proportion to the degree of modification in the natural agents; and as its basis is a modification of the organic functions, it secures from other maladies, which require for their existence opposite modifications. It is for this reason that during, and even before an epidemic, we seldom meet with maladies of another kind. The morbid predisposition must, in every illness, necessarily offer peculiar pathognomonic signs. Unfortunately, those signs which offer most interest, are only determined in some chronic maladies—and even then in a manner more or less vague. We know, for instance, some signs of the phthisical, apoplectic, scrofulous, &c., constitution, but no one has hitherto thought of determining the signs of predisposition proper to every acute malady, and principally to epidemic diseases. It was during the cholera epidemic of 1848 that I conceived the idea of making researches of this sort. Starting from this principle that circulation and respiration diminish under the influence of condensed air, and that during the cholera epidemic there prevails an excess of atmospheric pressure with its consequences, I undertook during the epidemic of 1848 and 1853, two series of observations, in order to determine the signs of imminence of cholera, or rather of epidemic predisposition. Of course, I directed my attention especially to the change of the pulse. These observations, carried out on both occasions on three hundred healthy persons at Wilna, in a prison, and at St. Petersburg, on a regiment of the imperial guards, were repeated daily for several successive months, and furnished the following results:—

"1st. During cholera epidemics, many individuals—although in the enjoyment of good health—are affected by a very striking diminution of the pulse, as low as 45, and even 42 pulsations in a minute. 2d. This diminution is not accompanied generally by any morbid symptoms or indication. 3d. In proportion to the diminution of the circulation, the blood becomes black and viscid, and, on the contrary, it remains normal during the epidemic amongst those individuals who are not affected by the diminution in question. 4th. The cases

of cholera occur only with individuals previously affected with diminution of the circulation. 5th. The slackening of the pulse, which often precedes the choleraic symptoms for several weeks, may be considered as a pathognomonic sign of the imminence of cholera. 6th. The individuals who manifested signs of this imminence, have always avoided the attack of cholera, if they have accelerated the circulation of the blood by suitable treatment, regimen, &c. 7th. The slackening of the pulse as well as predisposition and choleraic attacks, have in general been proportioned to the defect of energy in the circulation, and to the excess of atmospheric pressure. 8th. This slackening does not occur among the healthy when the epidemic has definitively ceased. In conformity to the facts generally known, I shall endeavor to group into the following sections the phenomena characterizing the three periods which constitute the cholera:—

"I.—Stage of choleraic predisposition—Slackening of the circulation.

"The principal phenomena of this period are: the pulse large, slow (as low as 40 pulsations to the minute), and disappearing rapidly;* the respiration slow, deep, mingled with sighs, and presenting but very slight irritability. Subsequently the animal heat less intense, paleness of the tongue and the other mucous membranes; numbness of the limbs, and an extraordinary disposition to the formation of ecchymosis; a defect of perspiration and of characteristic secretions (those from digestion, evacuation of urea, &c.); dulness of the senses, congestions to the head, strange apprehensions and appetites; borborygmus, from serosities transuded into the alimentary canal, and the dispositions to diarrhoea which is the result. Phlebotomy furnishes a blood excessively venous, and which is moreover thick, viscid, devoid of fibrine and water, and abounding, on the other hand, in globules and albuminous parts, the consequence of which is, that the blood in the veins becomes coagulable, forms very rapidly, and the serous portions in it are defective. This intermediate stage between health and disease is generally accompanied by a peculiar indolence arising from the defective action of the nervous system, which, receiving a blood not sufficiently oxygenated, is necessarily altered in its functions. Moreover, the phenomena of this period, as they do not cause well-determined suffering, remain in general unperceived or neglected. If these phenomena are attentively observed, it will be recognized that they all have a common origin in the want of energy of the circulation.

"II.—Collapse stage—Primary stagnation.

"The characteristic phenomena of this period form two thoroughly distinct groups: that of the stagnation of the blood in the periphery, and that of congestions in the central organs. To the first category must be referred—absence of pulse, coldness of surface, cold breath, deep respiration, and a complete want of irritability in the respiratory organs, almost impossibility to cough and sneeze; lividity and rugosity of the skin; absence of perspiration, urine, saliva, tears, bronchial and nasal mucus; an insatiable thirst; and a metallic voice caused by extreme dryness of the gullet and larynx, whose dimensions are changed by the dryness itself. Let us add, besides, to this category, the cramps which occur *per reflexum*, in consequence of the pressure on the nervous trunks produced by the stagnant blood. To the congestive group are referred—vertigo, pains in the head, heart, and stomach, oppressions of the chest, internal heat,† want of sleep, the characteristic vomitings and purgings, which usually contain nothing more than the serosities of the blood. Phlebotomy furnishes no more blood in this stage, on account of sanguineous obstructions in the capillaries, which hinder the passage of the blood into the veins. I refrain

* All the variations of the pulse may be observed with remarkable precision by the assistance of the sphygmometer, an instrument which I have rendered as sensitive as practical, by the application of a hair, which prevents the capillary force.

† Although the temperature generally diminishes among those attacked with cholera, still the parts which are in direct connection with the congested organs, as the vertebral column and the occiput, do not present a lower temperature.

from enumerating the well-known characters of the blood. The air expired in this stage presents less carbonic acid; nevertheless, the quantity increases as soon as what is called reaction comes on, a condition in which, after the stagnation of the blood, the circulation and respiration are accelerated, and when the carbonic acid accumulated during the stagnation is eliminated from the organism.

“ III.—Typhoid stage produced by the consecutive stagnation.

“ The characteristic symptoms of this period are: the pulse small and frequent, a disagreeable heat, a colliquative sweat, and colliquative evacuations generally; a characteristic indifference, delirium, gnashing of the teeth, hiccup, drowsiness, &c. &c. In considering attentively, on the one hand, the characteristic symptoms of cholera, and on the other, the well-known signs presented by the organism when subjected to an excessive atmospheric pressure, we arrive at the conviction that these symptoms resemble each other to such a degree, that they may be regarded as completely identical.—Now, this identity, and the influence of the air in producing the epidemic, are amply confirmed by the following facts: 1st. The cholera is endemic in countries exposed to an excessive atmospheric pressure, as the East Indies, South Carolina, and other countries of the same nature of atmosphere. 2d. Cholera epidemics have always been preceded and accompanied by an excess of atmospheric pressure, and their intensity has always been in proportion to this excess—as would appear by the published diagrams attesting such a relation observed at London, Paris, and St. Petersburg. 3d. The cholera rages principally on the banks of rivers, the sea shores, in low grounds, valleys, &c. The constant relation between the strength of the cholera epidemic and the lowness of the ground, has been proved by most careful observations made in England, and chiefly in London.* The same relation has been equally evident at Paris, and in France generally. The departments and arrondissements in which the air was most confined always suffered most. It is known that the central departments of France, as also Switzerland, have always been almost entirely free from epidemics. In Russia, the countries which border the Caspian Sea, the level of which is six hundred feet below that of the Mediterranean, have always been the cradle of cholera epidemics. 4th. Cholera epidemics are always propagated in the direction of low grounds, banks of rivers, and other depressed localities. This is the origin of the popular opinion that this epidemic follows the water-course. Besides, the great plain which extends from the Caspian Sea to Paris and London has been the path followed by the cholera in Europe. The constant proportion observed between the intensity of cholera epidemic, and the size of the harbors, confirms also the influence of the depression of the ground. For it is quite evident that the size and depth of the harbor depend chiefly on the lowness of the land, without which the water would have taken a totally different direction. 5th. The mountain heights have hitherto been free from this epidemic, a circumstance which has induced people to take refuge there generally against this scourge. 6th. The specific gravity of the air increases during the cholera epidemic, as has been proved by the observations made by William Prout, in London. “ Now, the increase of the specific gravity of the air is always in the proportion of its density, which itself depends on the dryness and accumulation of the atmospheric column superimposed.” 7th. The cholera epidemic is generally preceded and accompanied by an extraordinary calm, which proves the condensation of the atmosphere; on the contrary, the epidemic ceases ordinarily or diminishes after the storm necessarily connected with the rarefaction of the air. 8th. If there is any wind during the reign of the epidemic, it is generally dry; and the epidemic extends in a direction contrary to the wind, because the air is condensed in that direction. This observation, while compromising the miasmatic theory, forcibly corroborates the present one. 9th. The epidemic produces, in general, uneasiness and the deterioration of the blood; these effects can only be caused by an agent like

* See the diagram annexed to the report of the scientific committee concerning the cholera epidemic of 1854.

the air universally diffused. 10th. Occupations which demand an exercise adapted to augment the active force, such as those of blacksmith, coppersmith, &c., protect to a certain extent against attacks of cholera, whilst the sedentary life predisposes to this disorder. This circumstance has led to the idea of copper preserving from cholera. 11th. The agents recognized as pernicious during the cholera, are precisely those which diminish the active force; whereas the influences which excite and increase it in a direction contrary to the epidemic. The most striking and confirming opinion here exhibited, is the influence of the bleeding employed, in the first moments of stagnation, which is before the coagulation of the blood. It cures the cholera at the very moment of operation, which proves that the cholera depends on a mechanical impediment. 12th. According to observations of Dr. Caspar, cases of sudden death become, in general, more frequent as the barometric elevation increases. The same circumstance has been noticed during the prevalence of cholera.

"Lastly, I may refer here to my own observations above mentioned. It must be concluded from all those facts and observations, that cholera is no other than the result of an excess of atmospheric pressure. We can arrive, also, at the natural explanation of the phenomena attending this disease, from the vaguest premonitory signs of choleraic predisposition to the most prominent symptoms of the collapse and typhoid stages. In a similar manner are explained all the distinctive characters demonstrated by the autopsies. The intimate relation between atmospheric pressure and the cholera epidemic once firmly established, the mystery attending this disorder will disappear of itself. We shall then find perfectly natural and intelligible its endemic existence in some localities, and its entire absence from others—the manner of its propagation and extension by the way of low localities, and in a direction opposed to the wind, at the same time sparing the elevated places—the rapidity with which the cholera epidemic may be developed and disappear—the action of the different agents recognized as salutary or injurious in cholera—the decided predisposition to the cholera exhibited by some individuals, and on the contrary, the almost absolute exemption enjoyed by other persons—and in all cases according to the prevalence of their active force. The primary cause of epidemic cholera consisting in an excess of atmospheric pressure, and the proximate cause being in a stagnation of the blood with its consequences, protection from this malady will be secured by recourse to those agents which sustain the energy of the circulation of the blood and respiration, as soon as there is observed the slackening of the pulse described as above. These agents must, in this respect, be considered as preservatives. In Great Britain, attempts have already been made to determine the individuals under imminence of cholera, and thus to moderate the ravages of the epidemic; but these efforts have been confined hitherto to the exclusive examination of the digestive organs, which, during the period of imminence, present only very equivocal signs. Now, the pathognomonic sign of the imminence of cholera is in the slowness of the pulse, and the public hygienist, while determining during the epidemic the individuals who are predisposed, and accelerating the circulation of the blood, might preserve entire populations from the ravages of the epidemic. I will finish with the words of the celebrated English meteorologist, Glaisher: 'Were the meteorology of our town carefully ascertained, and collated with that at the metropolis, and both together with that of the country generally, in a short time we should be in a condition to elaborate a clear insight into the meteorological causes of cholera, influenza, and many phases of disease, which now burst upon us with the suddenness, and devastating power, and wrathfulness of a visitation.'"

ART. 7.—*On the Mortality of certain Diseases.* By Dr. GAIRDNER, Physician to the Royal Infirmary, Edinburgh.

(*Dublin Hospital Gazette*, Sept. 15, 1857.)

The following important observations occur in a paper communicated by Dr. Gairdner to the section of Physiological Science at the last meeting of the British Association:—

"The notes I am about to submit to the section are not to be considered as involving positive and dogmatic statements, so much as tentative data for future investigation. They are, however, I think, not unimportant, as involving the proof of a most striking source of fallacy in the registration of causes of death, according to the methods ordinarily pursued. They show, in fact, that the estimation of the relative and absolute frequency of the different modes and causes of mortality, is an inquiry as yet in its infancy, and requiring modifications, not only of detail, but of principle, before it can be considered as based upon positive data. A few years since, with the assistance of a considerable number of my medical friends, I made a collection of about 270 cases of fatal diseases, in proportions pretty equally derived from hospitals and from other sources, which series of cases might be regarded as exhibiting, not very unfairly, the ordinary mortality of Edinburgh, in a season free from remarkable epidemic disease. The returns received presented a rather small proportion of infantile mortality; in other respects, they represented all classes of the population, and nearly all ages, in something like the normal proportion. The facts bearing on the fatal event were usually stated in some detail, and not, as in most returns of mortality, by merely attaching an arbitrary name to the symptoms. Thus it soon became apparent that any attempt to assign each death to one cause only, must be arbitrary in the extreme, and must lead to grave inaccuracy as regards the ultimate statement of the frequency of certain causes. In fact, it has been clearly shown that men rarely die of one single disease; almost always there are complex conditions which cannot be, and ought not to be, rendered into a single form of expression. No doubt, one morbid form often predominates, and gives a character to the rest; but not less frequently it is entirely a matter of reasoning, and, therefore, of some degree of doubt, what is the primary and what the secondary disease. The consideration of these circumstances induced my associates and myself, in recording the results of our joint inquiries, to adopt a plan peculiar, so far as I know, to ourselves. Instead of registering one cause of death—one fatal disease—in each case, we determined to register as many as were clearly presented to us by the accounts furnished of the morbid history. Thus a result was obtained widely differing from that of the Registrar-general, and presenting a far greater approximation to the truth as regards some important particulars, than any return, however carefully compiled, founded on the ordinary system. I do not attempt to extend my statements, in the mean time, beyond the case of some very common forms of disease. First in importance, as in frequency, is tubercular disease, in the general sense, with its most frequent special form, *phthisis pulmonalis*. According to my returns, the former is a cause of death to about one-fourth, the latter to rather more than one-fifth of the population included in these inquiries. According to the Registrar-general, the proportions in London were, in 1854, less than one-seventh of the whole mortality for tubercular disease, and less than one-tenth for *phthisis pulmonalis*. The great frequency of tubercular disease is thus assuredly underrated by the Registrar-general, though not to anything like the extent of some other morbid forms. Passing to diarrhoea, I find that this very important cause of death is enormously underrated in the Registrar-general's returns. Diarrhoea is, in fact, entitled to be registered as a source of mortality in little less than one-fourth of the population of Edinburgh. In other words, of one hundred who die, not less than from twenty to twenty-five owe their death in some degree to diarrhoea. In the Registrar-general's returns it is only in cholera years that the cipher of diarrhoea reaches anything like this proportion: the proportion being, in ordinary years, from one-seventy-eighth to one-twentieth of the general mortality. It is obvious that the residual cases, or those merged and lost sight of by the Registrar-general, are cases of complicated, but not on that account less real or less fatal diarrhoea; such cases are, in fact, an immense majority of the cases of this disease. Disease of the heart, in one form or other, I find to be cause of death to not much less than one-eighth of the population, as illustrated by my returns. The returns for London in 1840, show this cause of death as only affecting one-fiftieth of the population; since this period, however, the proportion has been gradually rising, evidently owing to the increased care of

medical practitioners in reporting, and perhaps also of the Registrar-general in extracting from the reports, the cases to be placed under this head. I find no reason for adopting the popular theory that disease of the heart is in reality on the increase. I believe it is the art of diagnosis which has undergone change, not the frequency of cardiac disease. Pneumonia was fatal to one-eleventh; pleurisy (often combined with pneumonia) to one-twelfth; bronchitis to one-ninth of the population under my observation. These causes of death, also, are considerably understated in the Registrar's returns, and there is this additional anomaly, that while in the first reports of mortality in London the proportion of bronchitis was exceedingly small, it has now come to be for many years the preponderating form of chest disease, and counts its victims by hundreds, where it formerly counted them by tens. Is this a change in the character of disease, or in the character of diagnosis? I adopt the latter view, believing that there is no real evidence whatever of the enormous increase of bronchitis relatively to other forms of chest disease exhibited by the Registrar-general's returns. Next follows Bright's disease, including some of the allied diseases of the kidney, which may, with propriety, be included under the same heading. These morbid conditions I have found to be a source of mortality to about a tenth of the cases observed by myself and my associates. In the Registrar-general's reports for London, on the other hand, owing to the defective means of noting complications, Bright's disease finds its way into the returns in exceedingly small proportions; constituting in general terms not more than $\frac{1}{30}$ th of the gross mortality. A result so entirely inconsistent with medical experience as this, is sufficient of itself to show the perfectly enormous errors involved in the mode of proceeding by which one cause of death only is registered.

"I may remark, in conclusion, that in thus pointing out a source of fallacy, and in suggesting the remedy, I by no means wish rashly to supplant the present system of registration for the whole country. The labor involved in a system free from the defects pointed out, would be so prodigious as to stagger the most industrious and indomitable of statisticians; and the disadvantage of adopting any change in the present system, without preserving the means of comparison of results, is also such as to make it almost hopeless to propose any such measure. I would willingly, however, see limited experiments instituted upon the prevalence and mortality of the more important forms of disease. Such inquiries are well worthy the attention of the governors and medical officers of public institutions. The great point is to have them carefully executed, and this can only be done by some method which will prevent too great complexity of the investigation. The great object of most statisticians seems to be the accumulation of details, so as to procure very large numbers. This is, no doubt, necessary in some inquiries; but in vital statistics, a far more important object is the careful scrutiny and judicious appreciation of the conclusions fairly deducible from comparatively small numbers of cases, accurately and amply recorded. I would venture to propose, as a useful preliminary inquiry, the investigation of the most frequent only of the causes of death—excluding, in the mean time, those which are so rare as to require large masses of cases for their fitting display. The causes of death to which I have alluded, are among those of the first importance in frequency, and ought, therefore, to be worked out in detail before proceeding to others."

ART. 8.—*On the Bulgarian Campaign as affecting the Health of the British Troops in the Crimea.* By DR. WILLIAM AITKEN.

(*Lancet*, July 13, 1857.)

In a communication addressed to the Royal Medical and Chirurgical Society, 14th July, 1857, Dr. Aitken says, that the pernicious influence of the residence in Bulgaria had been hitherto entirely disregarded in estimating the sanitary condition of the troops during the first seven months' occupation of the Crimea, and that in all future pathological inquiries into the nature of the diseases from which our troops suffered, not only in the camp before Sebastopol, but

also at Scutari and other local hospitals, the influences noticed in this paper must occupy a prominent place. The great comparative losses which seem to have been sustained by the drafts of new men also require investigation, but that unless we are put in possession of the ages of the recruits sent out, their exact numbers and periods of service, their admissions to hospital, deaths, and invaliding, as distinct from those of the other troops, the comparative losses they sustained cannot be accurately determined. In this paper the author classifies the Crimean army into two parts, namely—

1st. Into the troops which served both in Bulgaria and in the Crimea, and which may be called the ex-Bulgarian part of the army.

2dly. Into the troops which served in the Crimea only, and which may be simply termed the Crimean troops.

The statistical information upon which the statements contained in the paper are founded, exists in the following records, namely—

1. Parliamentary paper, No. 42, of the session 1857, giving the date of arrival and strength of each regiment.

2. Parliamentary paper, No. 218, of session 1855 (pp. 474—479), giving the same information regarding the drafts sent out.

3. It is known from various sources what were the respective regiments which served in Bulgaria (*e. g.*, Parliamentary papers, No. 218 and No. 42, and Russell's "War").

4. The returns the author had been permitted to use, collected from the individual regiments, giving the monthly state of the strength of each regiment, and the diseases by which its losses were caused. From these tables the general abstract was made up, which is published by Sir Alexander Tulloch at page 171 of his volume, entitled, "The Crimean Commission and the Chelsea Board."

The conclusions arrived at by Dr. Aitken are—1. That the inactive residence in the malarious district of Bulgaria, during a period of three months, exercised a persistent pernicious influence upon the subsequent health of the troops in the Crimea, which continued to make itself felt, more or less, throughout the campaign, and more especially during the first seven months. 2. That the loss to the strength of the army during the first seven months was greatly more in those regiments who had been in Bulgaria, than amongst those troops who had not lived there, but who served during the same period in the Crimea, and who went through precisely similar hardships during the campaign. 3. That the loss of strength to the whole army was greatly increased by the proportionably very large amount of loss sustained by the drafts sent out to recruit the regiments. 4. That the general mortality was increased amongst the ex-Bulgarian troops, and that the invaliding was nearly doubled amongst them. 5. That the persistent pernicious influence of the residence in Bulgaria showed itself in a remarkable manner by the unfavorable results of the surgery of the war amongst the ex-Bulgarian forces, compared with the results in the forces which served only in the Crimea; but that on the whole the results of the surgery of the war were highly favorable compared with what is obtained in our large London hospitals.

The statistical results obtained were offered as approximative conclusions to the truth, from data not sufficiently extensive to give such conclusions with absolute accuracy.

When the sanitary state of the ex-Bulgarian division of the army was contrasted with the Crimean, it is observed—

1. That the admissions to hospital were greater amongst the Crimean portion of the army than amongst the ex-Bulgarian, and contained a greater proportion of enteric diseases, cholera, and scorbutus; while amongst the admissions from the ex-Bulgarian part, fevers and pulmonary diseases exhibited a higher ratio than in the Crimean part. 2. That while the admissions were greater from the Crimean portion, the mortality, compared with the amount of admissions, was much greater amongst the ex-Bulgarian portion of the army than amongst the Crimean. The causes of death which produced the greatest mortality stood in the following order: 1. Cholera. 2. Frost-bite. 3. Enteric diseases;

and 4. Fevers, amongst the ex-Bulgarian part. And 1. Cholera. 2. Enteric diseases. 3. Fevers. 4. Frost-bite, amongst the Crimean troops.

With regard to fevers, it is observed that the pernicious influence of the residence in Bulgaria showed itself in the deteriorated constitution of the soldier; and while the admissions to hospital were greater in proportion to strength amongst the ex-Bulgarian forces, the deaths were also more numerous (the per centage nearly doubled), thus proving how readily that portion of the army succumbed to disease; being "used up" when they left Bulgaria, they were less able to cope with disease, and more of them died. With regard to cholera, it was interesting to notice the similarity of pathological phenomena presented by the history of that disease in Bulgaria and in the Crimea, compared with its known phenomena as an epidemic disease. Up to, and including, the period from October till May, 1855, two separate epidemics may be said to have affected the army. The ex-Bulgarian campaigners were exposed to both of them. During the first epidemic, while in Bulgaria, they suffered severely; and, indeed, so long as they remained in the vicinity of Varna, the disease never left their camps; they carried it with them to the Crimea, and it continued to seize upon, and kill, many victims on the march from Old Fort to Balaklava, and more especially after the battle of the Alma, and on the famous flank march, when the fate of the more feeble soldiers was at once sealed by death. The Crimean epidemics of cholera present the following remarkable antithesis compared with the other classes of diseases:—

1. The per centage of admissions on the average strength of the troops serving in the Crimea only was much greater than the ratio of admissions amongst the ex-Bulgarian troops, and the per centage of deaths from cholera was also greater in the former than amongst the latter.

2. But the per centage of deaths, calculated on and compared with the admissions, was greater amongst the ex-Bulgarian forces than amongst the Crimean troops.

According to what is known regarding the nature of this remarkable disease, it may be noticed that already, during the Bulgarian campaign, the more susceptible of the troops had been seized with the disease, and many had already died. The disease, to use a common expression, "had worked itself out" upon them; so that fewer were in a condition to take the disease subsequently amongst the ex-Bulgarian troops while in the Crimea; and, therefore, fewer of this part of the army died in the Crimea from cholera compared with the strength. On the other hand, it may be observed, that on account of the "used up" condition of the ex-Bulgarian troops, a much larger per centage died amongst them of those who were attacked than amongst those who were attacked amongst the Crimean troops. The ratio of admissions for pulmonary diseases was nearly the same in both divisions of the army; but the deaths amongst the ex-Bulgarian troops were greater than amongst the Crimean forces, and the number invalided was also greater amongst them. It would be interesting to know how far such affections were purely idiopathic, and how far a tendency to the development of tuberculosis had, or had not, been engendered by the Bulgarian or Crimean campaigns. In the personal experience of the author, as well as that of Dr. Fraser, of the North London Hospital, phthisis was a rare disease at Scutari. The period of latency of malarial poison is another topic deserving of especial investigation in the experiences of the Bulgarian campaign. It is known that on the return of our troops from Walcheren, fresh cases of fever continued to occur so late as five, six, eight, nine and even ten months afterwards, so that the persistent pernicious influence of the Bulgarian campaign was not without a parallel. The reduction of strength of the ex-Bulgarian part of the forces, compared with the Crimean, is approximately inferred from the following considerations—namely: 1. The actual deaths in each portion of the army, and the ratio of these to the admissions and to the original strength. 2. The ratio of deaths and invaliding compared to the admissions, and to the original strength of each of the two divisions of the army. 3. The per centage of drafts to recruit the strength of the troops in each of the two divisions of the army. 4. The actual loss of strength by sickness, deaths, and invaliding, in each of the two divisions of the army if

drafts had not arrived. The severe duties of the front being chiefly borne by that portion of the army which served in the Crimea only, the loss to the ex-Bulgarian part could not be said to be increased by the severe and necessary operations of war during the siege. Great as was the loss of the corps in front, it was much below what some of the corps suffered who were not in front—*e. g.*, the 46th, 95th, 63d, 33d, 23d, 44th, 28th and 50th regiments. The loss in these eight corps averaged seventy-five per cent. during the seven months (Colonel Tulloch); and it is worthy of notice, that six out of these eight regiments were ex-Bulgarian forces; and with the exception of the 46th, whose great loss appears to have been from cholera immediately after their arrival, the cause of the great mortality amongst the other regiments is not accounted for. More full and accurate details will yet, no doubt, show how malarious influences imbibed in Bulgaria developed themselves by a zymotic-like action, under the melancholy state of things which Sir Alexander Tulloch and Sir John M'Neill so energetically and boldly brought to light.

ART. 9.—On the injurious effects of the Treadwheel upon the Health of Prisoners.

By EDWARD SMITH, Assistant Physician to the Hospital for Consumption, Brompton.

(*Lancet*, June 20, 1857.)

The aim of this paper (which was communicated to the Royal Medical and Chirurgical Society, 26th May, 1857) is to show how great is the wear of system caused by this mode of punishment, the inequality of the punishment, and the serious defect in the quantity of respiratory food supplied to the prisoners. The inquiries were made by the author on his own person in October, 1856, at the Coldbath-fields prison, by the courtesy of Mr. Pownall and other Middlesex magistrates. He worked the wheel during periods of a quarter of an hour each, with intervening periods of rest of a quarter of an hour, in the manner prescribed for the prisoners, and made seven series of observations. The average quantity of air breathed during the labor was 2500 cubic inches per minute, at a rate of respiration of $25\frac{1}{2}$ per minute, and a depth of respiration varying from $91\frac{1}{2}$ c. in. to $107\frac{1}{2}$ c. in. The rate of pulsation varied from 150 to 172 per minute. During the intervals of rest he sat quietly, and after thirteen minutes' rest the rate of respiration varied from 15 to $18\frac{1}{2}$ per minute, the quantity of air respired from 725 c. in. to 980 c. in., the depth from 48 c. in. to 53 c. in., and the rate of pulsation from 97 to 124 per minute. Before he entered upon the inquiry, he breathed in the standing posture about 600 c. in. per minute, at a rate of 14 per minute, and a depth of 43 c. in., and the rate of pulsation was 75 per minute. Thus, during the exertion the quantity of air inspired was more than fourfold, the rate of respiration was increased two-thirds, the depth of inspiration $2\frac{1}{2}$ times, and the rate of pulsation $2\frac{1}{2}$ times. The returns during the period of rest show that the effects of the labor had not passed away in a quarter of an hour. Compared with the results in the quiet sitting posture, the author stated that the effect on the respiration was $5\frac{1}{2}$ times, and on pulsation $2\frac{1}{2}$ times as great; and taking together the $3\frac{1}{2}$ hours of hard labor with a similar period of rest, he proved that the effect upon the system of the 8 hours' labor was equal to that of 24 hours of those not condemned to hard labor; and that if the whole 24 hours were taken together, the effect would probably be two-thirds greater than that of occupations not laborious. He then contrasted those results with others which he had obtained for the purposes of comparison. Thus, fast walking, at upwards of four miles per hour, caused a rate of respiration of 30 per minute, a depth of 80 c. in., and a total quantity per minute of 2400 c. in. The rate of pulsation was 130 per minute. Ascending steps at the rate of speed of the treadwheel—*viz.*, 640 yards per hour, caused the rate of respiration to be 22 per minute, the depth 90 c. in., and total quantity per minute 1986 c. in., and a rate of pulsation of 114 per minute. Carrying 118 pounds at the rate of three miles per hour induced a rate of respiration of $24\frac{1}{2}$ times per minute, a depth of 90 c. in., and a total quantity of 2141 c. in. per minute, with a rate of pulsation of 189 per minute. Thus the labor of the treadwheel produces greater effect upon the respiration than any of those modes of exertion, while the effect upon pul-

sation was greater in the last severe labor only. The total quantity of air breathed per hour upon the treadwheel (if the labor were continuous) would be 150,000 c. in. as opposed to 27,000 c. in. in the quiet sitting posture; and the wear of the system would, upon the known principles of science, be in a somewhat similar proportion. He then proceeded to consider the effect of this exertion upon the system, and showed that the excessive exercise of the lungs and heart must ultimately lead to phthisis, asthma, emphysema, congestion of various organs, and disease of the heart, and in persons with diminished vital capacity of the lungs, and weak hearts, the effect must sooner be very serious. In reference to food, he was of opinion that the reparative (nitrogenous) food, as flesh and bread, was ample, and required revision only in the better distribution of it—as, for example, the removal of 2 oz. or 3 oz. of the 6 oz. of cooked meat, allowed at the dinner four times per week, to the breakfast, which consists only of bread and cocoa. He also pointed out the importance (and especially to those who masticate imperfectly) of rendering the meat tender, and of allowing more time between the meal and the return to the hard labor. The great and most serious defect which he pointed out was in the respiratory food, since neither fat nor sugar is allowed except in combination, as in the ox heads, or in the briskets of beef, and in the milk and cocoa. No sugar, lard, suet, bacon, or butter are allowed, and of course beer and alcoholic liquors are excluded; these, with starch, are almost the sole articles of respiratory food. He dwelt upon the imperative necessity for an increase of fat, both in relation to the wants of respiration, and to the due digestion of starchy food; and showed that, under the present system, much food must be wasted from non-digestion, and the system must, and often does, decrease in weight. He then explained the mode of working the wheel, and showed that the labor is not only in moving the body as the wheel descends, but in maintaining it erect in opposition to gravity, since the centre of gravity is probably external to and in front of the body. He proved that it is an uneven punishment, the inequality not being that of guilt, but of physical conformation and health; and, moreover, that the resistance offered by the wheel is not uniform in various prisons, and has been lessened at the Coldbathfields prison; and hence, that the lives of the prisoners are at the mercy of uneducated engineers. He showed that the old, the tall, the feeble, those having unsound teeth, and diseased lungs and heart, those not accustomed to climbing or slow walking, and those with small bones and muscles of the back and upper extremities, must suffer the most, and hence that the punishment falls with different degrees of severity upon different classes of the community. He also pointed out the fact that weak hearts and lessened vital capacity of the lungs may exist with a fair amount of vital health, and hence would not be necessarily known to the prisoner, nor, indeed, to the surgeon, except on a minute examination. He was of opinion that it was a punishment unfit for the age (as the discontinuance of it in many prisons also implied), and certain, if long continued, to induce disease and a premature death; and not only rendered the prisoner a greater cost to the community whilst in prison, by reason of the increased quantity of food which the labor demands, but subsequently from a premature old age; and since the labor is not employed to meet the cost of maintenance of those who furnish the power, it is so much of human flesh and life wasted. In a postscript, he referred to the Government dietary for prisoners condemned for short periods, and showed that a system which affords only bread and water, or bread and gruel, for the whole diet, must be calculated to injure the health of the prisoners, a system far more repulsive than the private whippings which have been proposed and opposed.

(B) ACUTE DISEASES.

ART. 10.—*The Mortality from Eruptive Fevers at different seasons.* By Dr. TRIPE.
(*The Sanitary Review*, July, 1857.)

The main results of this paper (which was read before the Epidemiological Society of London) are these:—

1st. That *smallpox* presents two periods of depressed and two of elevated mortality; the first period of elevation occurring in January, and the second at the end of May and early in June, the former being the lightest: the first period of depression being at the end of March or early in April, and the second in September, the latter being the lowest; and that therefore *smallpox* is most fatal in winter, and next in summer, and least fatal in spring. 2d. That a series of cold springs is attended with comparatively a large mortality; and that the period of highest mortality coincided with a temperature of less than 40° Fahr., and the lowest of above 46° Fahr. 3d. That the average highest mortality, in 17 corresponding weeks of 1840-56 was more than double the average lowest mortality. 4th. That *measles* has only one period of highest, and one of lowest mortality, the former occurring in December, and the latter varying in different years; but the rate of death in spring is much smaller than in any other quarter. 5th. That the rate of death was greater in the series of spring and winter quarters which were below the average temperature than in those which were above it. 6th. That, as in *smallpox*, the average highest mortality during 17 corresponding weeks in 1840-56 was more than double the average lowest mortality. 7th. That *scarlet fever* presents one period of highest and one of lowest rate of death, and this more markedly than either *smallpox* or *measles*; the greatest number of deaths occurring at the end of October or beginning of November, the lowest at the middle or end of March or early in April. 8th. That the average of mortality is higher in warm springs than in cold. 9th. That the mean of the greatest number of deaths in 17 corresponding weeks of 1840-56 was about twice and four-fifths as large as the mean of the lowest number of deaths in 17 corresponding weeks. 10th. That although there is a period at which *fever* is more ripe than any other—viz., from the thirty-sixth to the fifty-first week—yet that there is not any particular short period at which it can be said to reach its culminating point. 11th. That the greatest rate of death occurs in autumn and the smallest in spring, the difference between them being less than in any other eruptive fever. 12th. That the average maximum number of deaths in 17 corresponding weeks in the years 1840-56 was not much more than one half that of the minimum. 13th. That the period of greatest mortality from diarrhoea is very definitely marked, occupying a period of about seven weeks (from the thirty-first to the thirty-seventh), during which more than two-fifths of the annual mortality takes place, the greatest rate of death extending from the last week of July to the first week in September. 14th. That this period corresponds with a mean weekly temperature of 60° or above.

ART. 11. *On the Existence of Typhoid Fever in India.* By Mr. SCRIVEN, First Assistant-Surgeon, Presidency General Hospital, Calcutta.

(*Indian Annals of Med. Science*, April, 1857.)

In an interesting paper on Indian fevers, Mr. Scriven relates seven cases which seem to contradict the idea that typhoid and typhus fevers are unknown in India. These cases are not, all of them, so conclusive as could be desired, but still they are of considerable interest. The one in which the symptoms during life and the appearances after death are most carefully related, is this:—

CASE.—A sailor boy, æt. 17, admitted January 4th, 1857, into the Presidency Hospital, Calcutta.

January 5th.—Three weeks in Calcutta. Has been sick with diarrhoea the last six days. Watery purging. No straining. Has had a little vomiting. Says he has had only two stools per diem since he fell sick. Has no appetite. Is complaining of headache. Has had two watery evacuations in the night. Face a little flushed. Very thirsty. Tongue slightly coated with a white fur, no abdominal tenderness. Pulse 120. Skin cool and moist. Stools stained with feces, but do not contain much solid matter. Slept last night.

6th.—No purging in the night. Continues thirsty. Skin harsh. Pulse 120. Tongue a little dry, brown in the centre. Abdomen full, hard. No tenderness. No headache. Has a languid and somewhat distressed look.

7th.—No purging yesterday. Has had some in the night. Stools watery, stained with feces. Abdomen full, hard, rather tympanitic. No tenderness, or evident enlargement of liver or spleen. Slight moisture on face. Skin otherwise harsh. No spots. Speaks slowly and is rather confused; says he has had no purging. Is greatly prostrated. Decumbency on back. Tongue dry, brown. Pulse liquid, compressible, 136. Respirations 16. No headache. As early as the day before yesterday appeared a little confused; awoke in the afternoon and thought it was morning. Urine straw colored, acid, sp. gr. 1010, contains phosphates and is highly albuminous.

8th.—No better. Face sunken. A little delirious in the night. Seems listless in the day-time. Speaks but little, but answers questions correctly. Has slight tenderness a little above right iliac fossa. Abdomen still full. Stools frequent, more deeply stained with feces. Skin harsh. Pulse 128. Tongue dark brown. Sordes on lips. No cough, but slight mucous rhonchus about base of right lung. No evident enlargement of spleen or liver. Pupils dilated. Vomited a little in the night. No eruption on skin. Respirations 16. Temperature 100.

9th.—Much the same. Countenance vacant. Great prostration. Pulse 160, very feeble. Abdomen still swollen. Slight tenderness on right side of belly. Tongue black, dry. Teeth and lips loaded with sordes, only one stool yesterday; three in the night. Is drowsy and stupid, but answers correctly when roused. Had muttering delirium yesterday. No distinct account of any in the night. Temperature 101°. Very thirsty. Respiration only 10 in the minute. Sonorous rhonchus all over both lungs. Skin harsh. No perspiration.

10th.—Seems to be somewhat better. Respirations 14. Pulse 136. Tongue cleaner, brown; less sordes. No delirium. Still a little tenderness of abdomen; somewhat less fulness. Has no cough. Very thirsty. Skin dry. Temperature 97°. Four stools since yesterday morning. Less rhonchus in chest.

11th.—Seems better. No delirium; complains of headache. Tongue moist, less coated. Still thirsty. Two stools since last report.

12th.—Better. Tongue cleaner, moist; almost no sordes. Slept well. No delirium; a little dull of comprehension. No headache; pulse 112. Respirations 16. No cough. Two stools since yesterday morning. A good deal of mucous and sonorous rhonchus in chest. No eruption. No sudamina; skin harsh. No perspiration. Temperature 98°. No abdominal tenderness. Abdomen less swollen.

13th.—Improving. Pulse better, 104. Tongue clean, moist, red; a little ulcerated at edges. Coughed frequently last night. Complains of slight pain in the head. Urine pale, straw colored, 1010, acid.

14th.—Much the same. Abdomen hard, not much swollen. Only one stool since yesterday morning. Urine contains a small quantity of albumen.

15th.—No purging since last report. Pulse very rapid and feeble: cannot be counted. Has a superficial slough on the right cheek. No abdominal tenderness. Coughs frequently. Tongue moist, slightly coated.

16th.—Erysipelas commenced yesterday from the slough on the cheek, and has now involved the whole of the right side of the face, except the forehead, and extends over the nose to the other cheek, involving the left eye. Right eye closed. Has been delirious in the night. Breathing oppressed. Pulse very rapid and feeble. Has been three or four times at stool. Evacuations consistent, partly figured. Belly not swollen, but rather hard. No tenderness.

17th.—Died at 1 A. M.

Post-mortem examination, thirteen hours after death.—Body not greatly emaciated. *Head:* Brain and membranes perfectly healthy. *Thorax:* Heart healthy, contained almost no blood; weight, 8½ oz. Lungs adherent by old adhesions, much congested posteriorly, a great deal of frothy liquid exuded from them on section. Surfaces rendered irregular by hard masses scattered through the substance, apparently consequent on lobular pneumonia. No tubercle. *Abdomen:* Liver flabby, anæmic; weight, 62 oz. Kidneys soft, flabby. Capsule separated with difficulty, tearing off portions of the cortical substance, which had numerous white granules, the size of pins' heads, scat-

tered through it, and surrounded by vascularity. Weight of right kidney, 9 oz.; of left, $7\frac{1}{2}$ oz. Spleen engorged, soft, pulpy; weight, $9\frac{1}{2}$ oz. Stomach healthy. Large intestine healthy. Small intestine healthy for the greater part of its length: the first two or three of Peyer's patches (proceeding from above downwards) were likewise healthy: the next three or four were congested, and raised, of a dusky purple color. Below this the mucous membrane itself was inflamed, and Peyer's patches ulcerated. The solitary glands were likewise inflamed, and many of them ulcerated. The ulcers involved the whole of the surfaces of the patches; there was no slough present upon any of them. The ulcers were of a purple color. The intensity of inflammation increased downwards, and at the lower end the mucous membrane was of a deep red, which was evident indeed on the peritoneal surface, but there was no ulceration in the last three inches of the gut, nor on the ileo-colic valve. The mesenteric glands corresponding to the diseased parts were enlarged, and of a deep purple color.

**ART. 12.—*Is intestinal Hemorrhage diagnostic of Typhus or Typhoid Fevers?*
By Dr. HENRY KENNEDY.**

(*Dublin Quarterly Journal of Medicine*, Aug. 1857.)

In this paper, which was read at a meeting of the College of Physicians in Ireland, Dr. Kennedy relates a case of typhoid fever in which blood was poured out in very large quantities from the lower part of the jejunum and upper part of the ileum, without any abrasion, and after this he analyzes the cases recorded by Louis, Chomel, Jenner, and others. His conclusions are:—

1. That intestinal hemorrhage is common to fevers of both the typhus and typhoid type.
2. That it would appear to be more common in typhus and common fevers, than in typhoid fever.
3. That the blood may, beyond dispute, be exuded from the mucous membrane, independent of ulceration.
4. That a hemorrhage sufficient to cause death may take place from the mucous membrane of the small intestine, and may be, in the strictest sense, an internal hemorrhage, the blood not leaving the part on which it was poured out.
5. That the recovery of patients after intestinal hemorrhage is, in general, too rapid to allow us to suppose that it was the result of ulcerated intestine.
6. That as a corollary from these several points, intestinal hemorrhage may afford us an additional diagnostic mark between typhus and typhoid fevers.

**ART. 13.—*On the Spots observed in the progress of Fever as a means of diagnosis.*
By Dr. HENRY KENNEDY.**

(*Dublin Hospital Gazette*, April 15, 1857.)

With regard to these spots, views prevail which, in Dr. Kennedy's opinion, are not supported by facts. He has often observed cases of fever to come from the same room—often from the same bed—and yet some of them only to present spots. Or a husband and wife are attacked with fever, and the one is spotted, and the other not. Some time since, three brothers, adults, were admitted into Cork Street Hospital, under the care of Dr. George Kennedy. They lived together, and were admitted within two days of each other; they had all heavy fever, but one only was spotted. Will it be maintained that those men suffered from different kinds of fever, merely because one was spotted and the others not? Some time back, he saw, with Dr. Denham, five members of the same family laboring under scarlatina; not one of these had the same form of disease. Few would maintain that the disease was due to a different poison in each instance. Yet, when precisely a similar occurrence takes place in our ordinary fevers, it is considered by many to be caused by a variety in the poison; and the presence of spots, above all, makes many look on the disease as something very specific. Dr. Kennedy believes that all such differences as those alluded to are due, either to the intensity of the poison, or

the state of the constitution at the time being; or any cause rather than a difference of the poison.

A second point to be noticed is, as to whether there is anything of a specific character in the fever of this country. In 1847-48, the expression "Irish fever" was to be found through all the English papers. Dr. Kennedy asserts that there is no fever peculiar to Ireland, as distinguished from what is seen in England and Scotland; and also that, before the epidemic fever in Ireland in 1847-48, the disease had increased much in England. There is a great law affecting all the more wide-spread epidemics, and showing that their course across the globe is from east to west, or from southeast to northwest.

At a certain period of some cases of fever, spots make their appearance. This is usually from the sixth to the ninth day of the disease; but on this point there are great differences. They will be occasionally seen as early as the third day, reckoning from the period of the rigor. There are difficulties, however, in determining this; for it by no means follows that the patient is not ill before the rigor. Still, some of the cases seen by Dr. Kennedy were inquired into as minutely as was possible, and the spots did appear then on the third day. On the other hand, they are often much later than what is usual in making their appearance. Thus he has seen them as late as the twentieth day; and very critical cases all such in general were. In cases where the fever is made up of two parts, with an interval between, they may be absent in the first and present in the second, and *vice versa*; though the last is not as common as the first. Dr. Kennedy has notes of more than one case where the individual passed through three distinct fevers before leaving the hospital; yet it was only in one of the series that spots appeared. It is the last of the series which exhibits the spots in these instances. In one case of this kind, it was the fourth attack, and the spots then were of the character of measly eruption.

There is still one other point worthy of notice in connection with cases where we should have every reason to suppose that they would appear at the same time. As an example, not long since, two sisters, both grown women, and remarkable for their great stature, were admitted into Cork Street Hospital, laboring under heavy fever. They each exhibited spots; yet one of them was spotted four clear days before the other. The fact is of interest, as showing how the constitution will modify the eruption; for there was no other explanation which, in this particular instance, would account for it. These two sisters had sickened at the same time. Precisely an analogous circumstance has come under Kennedy's notice in scarlatina; that is, the period at which the rash appears will vary by three or four days, though children of the same family have sickened together.

The spots of fever may exhibit themselves, as is well known, over the whole body; but in general they are more limited than this. Dr. Kennedy believes they will be as early seen about the pectoral muscles as anywhere else. There are some modifications of them, however, having relation to their site, which appear worthy of notice. Thus it is by no means uncommon to see them exclusively confined to the upper part of the body. Not one will be seen on the lower limbs. He has seen them, too, nearly exclusively confined to the abdomen, but not absolutely. Again, Dr. Kennedy has seen them confined, in the most marked manner, to the joints. Not long since, a young man of eighteen was admitted into Cork Street Hospital, under Dr. George Kennedy. He was very seriously ill, his fever being marked by prolonged vomiting. His pulse was rapid and very weak. In the course of this illness, his elbows and knees exhibited spots, each in number, probably, of from forty to fifty. Not a single spot could be detected anywhere else. Their character partook of a mixture of purpura and petechiæ, and they appeared to be slightly raised. The case recovered. He has seen many cases where the spots were first visible on the backs of the wrists; and usually they have here been of a bright red color. He has seen also instances where they were located in patches, as it were, and these symmetrical, on each pectoral muscle. In one instance, well-marked spots, of a bright hue, came out over the whole throat and neck, and the inside of either elbow; nor could any be detected elsewhere.

Lastly, he has seen spots on the forehead. He mentions this particularly, because some observers have asserted that they are never seen here. He has notes of some eight cases, which may now be increased to eleven, where there could be no question of the fact. Louis gives one instance where spots were visible on the face. The way, then, to speak of the fact is, as being very rare, in comparison with the number of cases which exhibit spots elsewhere; but to say it does not occur at all, is going further than facts will justify. Dr. Kennedy thinks he has seen spots on the conjunctiva, or at least what might be described as a mottled state of this membrane; and instances are not uncommon where a rupture of a bloodvessel, or an exudation of blood, has caused a distinct ecchymosis in fever. It is straining the fact too far to suppose that such a spot is but an ordinary petechia in an unusual place. He has never seen the occurrence in fever, except in conjunction with spots elsewhere.

The character of the spots in fever has long attracted notice, and some of them unquestionably deserve a special attention; but it appears to Dr. Kennedy that too much stress has been laid on this point. Thus the bright, well-defined, lenticular spots are, he believes, constantly spoken of as being different from what are called genuine petechiæ. He thinks this is an erroneous way of considering the matter; for the simple reason, that they may be very often seen existing together, at the same time, and on the one patient. In this way, we may find the bright well-defined spots on the arms, and the petechiæ on the body. Or, again, we may see one member of a family presenting the bright spots, and another the petechiæ; yet both have come from the same room. Some of the older authors on fever have described two crops as occurring in the one patient. This he has seen in the most marked form, not only in fever, but also in scarlatina. And, in truth, the analogies which the exanthemata hold, one with the other, do not appear to him to have received that consideration which they deserve. Who has not seen cases of scarlatina presenting on the surface different hues of eruption at the same time? Purpuric spots, great patches of redness of different hues, universal redness of the entire surface, and above all, spots, not possible to distinguish from what are called genuine petechiæ, may be mixed up together in the one patient; to say nothing of the varieties which the disease so often presents when going through an entire family. Now, under such circumstances, no one ever dreams of saying there are different poisons, according to the varied hues of the rash; yet, when exactly analogous facts occur in common fever, some inexplicable necessity seems to arise for drawing distinctions where there are in reality none, and refining to a degree which, it appears, facts do not justify. That much valuable information—more especially as regards prognosis—may be derived from close observation of the eruption which common fever exhibits, is readily admitted; such as the brighter or darker hue which it presents, the greater or lesser size of the spots, their early or their late appearance, &c. But these points are quite beside the question whether the varieties which we see in the rash of common fever be due to separate and specific poisons, or only to one; and whether it be not more consistent with facts to attribute them rather to the temperament of the patient, the state of his general health at the time being, his age, &c., rather than to this or that poison.

This leads to a question in direct connection with this part of the subject, about which more has been written than on any other; that is, the distinction which exists or is said to exist, in the rash of typhus, as distinguished from the fever attended by local lesion in the small intestine, and known as typhoid fever. On this point, Dr. Kennedy believes authors have been too precise, and have not made allowance for the possibility of deviations, which here, as indeed in every other point connected with fever, are liable to arise. Thus, from the perusal of the most recent works on the subject, one would suppose that typhoid fever could not exist without the presence of bright lenticular spots, few in number, and disappearing long before the fever ends. He does not deny that this state generally obtains; but he says that it is by no means constant. He has observed cases from the very beginning to the death of the patient, and to a post-mortem examination, disclosing ulceration of the small intestine; and yet from first to last no spots whatever were visible. And the opposite of this,

again, is still more common. He has notes of a number of cases where the spots had all the characteristics, as to time, number, size, and disappearance, and yet the cases had no other symptom whatever of enteric fever, and in reality were not the disease at all. He has also witnessed cases where all the symptoms were those of enteric fever, except that the spots were dark on the chest; and in the inguinal regions, assumed the character of purpura; also a case where the spots were genuine petechiæ, and where ulceration of the bowels was found. With such facts in view, great caution should be used in pronouncing any spots as diagnostic of this or that kind of fever; or at least in giving them more weight than any other single symptom of the disease is entitled to.

It has been already stated that much valuable aid, in a prognostic point of view, may be derived from the spots which appear in fever; and it is generally admitted, that the darker and larger they are the more serious is the case. The worst cases Dr. Kennedy has ever seen have been attended with few spots of a large size, and confined very generally to the region of the clavicles and groins, sometimes running down the inner side of the thighs. These large and dark petechiæ, or by whatever name they are called, are not confined to typhus, but may be seen in puerperal fever, and in some cases of malignant scarlatina. He has also observed cases—rare ones—where the subcutaneous veins of both the upper and lower extremities have allowed a bloody serum to exude, which is quite visible through the skin. With this state he has found in the pleura, and also the pericardium, and on the surface of the brain, serum poured out which was likewise tinged deeply with blood. In one instance he found a large effusion of blood under the pleura covering the left lung.

Of the supervention of fever in persons afflicted at the time with chronic diseases, all have probably seen examples. He has met several examples of persons who were hemiplegic, and in this state were attacked with petechial fever; and again, others who labored under chronic bronchitis and asthma. Cases of phthisis, too, have come under his notice in a similar way; but the fever in these instances has been rarely attended with spots. This latter, however, he has witnessed, the rash being most copious. Cases of chronic affections of the eyes, ulcers of the legs, and chronic diseases of the skin, are of very common occurrence in union with spotted fever. Lastly, he has witnessed fever, in its very worst forms, with both primary and secondary syphilis. It is worthy of notice how little any of these affections are altered by the fever. They are certainly not made worse; though such might be expected, at least of some of them. He has, however, seen cases of disease of the skin, where it was got rid of, after the fever. But usually they go on as they did before. It is only a state of derangement of the general health, and not any specific affection, which is likely to be bettered by spotted fever.

Dr. Kennedy concludes his paper by the following propositions:—

1. There is no form of fever peculiar to Ireland.
2. In 1847-48, the epidemic which then prevailed in Ireland had existed in England for months previously.
3. This epidemic, like all other great ones, travelled from east to west.
4. The idea of different poisons, as a cause of the several varieties of rash, does not appear to be borne out by facts.
5. The analogies derived from the study of the exanthemata are opposed to the idea of there being more than one poison.
6. Red and dark petechiæ may co-exist in the same patient, at the same time.
7. Either may precede the other. That some members of a family may exhibit spots—others not; all being ill at the same time.
8. Petechiæ may be almost exclusively confined to the abdomen, or to the upper half of the body; or exhibited in groups on the pectoral muscles, the front of the larynx, or strictly confined to the knees or elbows.
9. They may be seen occasionally, but unequivocally, displayed on the face, and possibly on the conjunctivæ.
10. Bright lenticular spots, and few in number, are of frequent occurrence, without any other symptoms of enteric fever.

11. Fever without intestinal lesion may exist without any spots whatever.
12. The same lesion may exist with dark petechiæ.
13. Petechial fever may run its course in patients affected with such diseases as hemiplegia, phthisis, syphilis, &c.
14. Large, dark petechiæ are not confined to typhus, but may be seen in puerperal fever, and cases of malignant scarlatina.
15. In some very bad forms of fever, the veins allow the blood to exude in a very striking way; and together with this, serum, deeply tinged with blood, may be found poured out in the serous cavities.

ART. 14.—*The history of Gaol Fever in England.* By Dr. F. C. WEBB.

(*The Sanitary Review*, Oct., 1857.)

The subject of this paper is introduced by some remarks on the impossibility of any class of society being subjected for a length of time to the causes of disease without final participation by the rest of the community in the results. The testimony of Lord Bacon is extant as to the frequent occurrence of disease taking its origin among prisoners—"long, and close, and nastily kept." That such occurrences were not limited to his age is abundantly proved by extracts from the writings of Howard and Wild, illustrative of the state of prisons in the 18th and early part of the 19th centuries, and of the etiology of gaol fever. The appreciable causes which produced the disease, were, the crowding of human beings in wall dungeons, the withdrawal of a proper supply of air and water, the want of nourishment and exercise, inadequate clothing, the filth resulting from the absence of sewerage and necessaries, the operation of a sanguinary and ill-regulated penal code, and consequent mental depression. Reference was then made to various acts of legislation on the subject of gaol fever. The first outbreak of gaol diseases of which we have an account took place in 1414, when the prisons of Newgate and Ludgate were severely visited. In 1522 an outbreak took place at the sessions held in the castle of Cambridge. This was followed in 1577 by the celebrated "Black Assize" at Oxford, when 510 persons were infected, and died from July 6th to the 10th of October. A description of the symptoms of the disease is given from the accounts of Cogan and Stowe; the testimony of the former as to the exemption of women and children—until a late period the gaol distemper was popularly believed to affect men alone. That this in the 18th century was not founded on fact is proved by the testimony of Pringle and Lettson. The "sickness of the house," in the Queen's Bench prison in 1579 was made the occasion of a petition to Queen Elizabeth. A similar outbreak to that at Oxford took place at Exeter in 1585. A scantiness of detail as to disease in prisons in the 17th century was accounted for by the difficulty of separating the prison element from the general run of cases, producing the pestilential fever so frequently rife during the civil wars; by the succession of epidemics of plague, and the frequency with which petechial fever was confounded with that disease; by the political excitement of the time, which probably interfered with the careful chronicling of such events. Gaol fever was found to prevail in the 18th century, whenever from any cause the gaols became crowded; as in 1730, from the unparalleled amount of crime in 1749, on the conclusion of the peace of Aix-la-Chapelle; and under similar circumstances in 1783. Allusions are made to the outbreak at Taunton and Exeter, in 1730; the state of the Irish prisons in 1740 and 1741; the disease in the gaols of Limerick and Tralee. The distemper was conveyed by some deserters who had been confined in prisons, to the Duke of Cumberland's army, at Inverness, in 1746. The author then gives Pringle's account of the epidemic. An outbreak occurred at the Old Bailey Sessions, in 1750, when curiously enough those to the right of the Lord Mayor generally escaped; the reason assigned being that a stream of air from the window directed the *materies morbi* to the other side of the court. A great benefit resulted from a ventilation constructed at Newgate, and worked by a machine in the manner of a windmill, in 1752. Seven of eleven workmen employed in erecting this ventilation contracted the fever, and by one of them a whole family was infected. Notice was then made of its conveyance from Exeter gaol to the town of Ax-

minster, in 1750. It prevailed in 1761, among the prisoners of war at Porchester and Winchester; at Warwick and Bedford, in 1772—spreading, in the latter instance, to the town. Dr. Lettsom describes an outbreak in Long Lane, Aldersgate Street, the fever being brought there by a person who had contracted it in Newgate. Outbreaks occurred in Aylesbury gaol, in 1773-74; at Dublin, in 1775; at Hertford, in 1776. It subsided in the borough and county gaols until 1783, when part of the forces being disbanded, the prisons were again crowded, and fever reappeared. At Worcester it appeared in a malignant form, and was thence conveyed to Droitwich. The author proceeds to give Pringle's and Lind's testimony as to the influence of prisons as sources of infection to the army and navy. The disease was also carried by transported felons to the penal settlements in America. The fever which broke out amongst the Spanish prisoners, in 1780, appears to be distinguished from the English gaol distemper, by the general absence of eruption and head symptoms. Dr. Webb states his opinion of the nature of the true gaol distemper. It was typhus fever in its most characteristic form, identical with hospital and ship fever, and the pestilential fever of Sydenham. When suddenly fatal, which it frequently was, it corresponded with the "typhus siderans" of authors. Great light has been thrown by the subject on the etiology of typhus fever. It has entirely disappeared as a gaol disease. The author concludes the paper by a few remarks on the encouragement afforded by such a retrospect to philanthropists and promoters of sanitary reform.

ART. 15.—*On the Temperature of the Body in Intermittent Fever.* By Dr. S. TH. MICHAEL.

(*Archiv für Physiolog. Heilkunde*, Heft 1, 1856.)

These observations were made in different types of intermittent fever, and repeated at intervals of five minutes, so as to determine with exactness the precise variations of temperature.

Their result is that the temperature begins to rise at the rigor, and rises by slow degrees; and that after this it falls by slower degrees, and with intermissions. At the commencement of the rigor, and at the end of the period of sweating, the temperature is below the natural standard, sometimes to the extent of some degrees, sometimes to certain portions of a degree.

In the majority of cases, the maximum elevation was between 32° and 33° Reaumur, rarely below, more frequently above. The highest point ever attained was 33.4 Reaumur.

After the administration of sulphate of quinine the temperature did not attain to the same degree of elevation as previously; and during convalescence it remained below the normal standard, or only occasionally became raised to the fraction of a degree above it.

ART. 16.—*On the Interblending of Dysentery, Scurvy, and Typhus in the Hospitals of Constantinople during the winter 1854-55.* By Dr. THOLOZAN.

(*Bull. de l'Académie*, xxi., Sept., 1856; and *Schmidt's Jahrb.*, iv. 1857.)

During the winter 1854-55, Dr. Tholozan had under his care, in the principal French Hospital at Constantinople, 1,200 patients, of whom 290 died there from cholera, dysentery, scurvy, and typhus. The three latter affections, he tells us, were frequently so interblended the one with the other, that it was difficult to say which of them was the predominant affection. Persons suffering from scurvy were delirious as in typhus, or they exhibited symptoms of dysentery; those affected with typhus suffered from dysentery and became scorbutic. The characteristic exanthem of typhus appeared along with symptoms of dysentery in some cases, and instead of fever, the symptoms were delirium, headache, ringing in the ears, and sleeplessness. A dysentery of this kind was especially contagious, and frequently gave rise to typhus. In other cases, scurvy was complicated with dysentery, and the affection of the gums and the bloody infiltrations were wanting. In others, again, the symptoms of typhus suddenly gave place to those of scurvy in their severest forms, and a gangrenous

condition of the mouth and of the extremities became a frequent condition. In many instances, also, this confusion was even worse confounded by circumstances which had to be referred to cholera, rather than to dysentery, or scurvy, or typhus.

ART. 17.—*On the value of Arsenic in Cholera.* By Dr. BLACK, of Chesterfield.

(*Lancet*, Oct. 3, 1857.)

Having been led to think (v. "Abstract," Vol. XX. p. 241) that quinine and arsenic were the most trustworthy remedies in cholera, we are quite prepared to believe, with Dr. Black, that arsenic will also prove to be a valuable remedy in the same affection. Dr. Black says:—

"It is now almost three years since I published, in a contemporary journal, a number of cases of the very worst form of English cholera, in which I had obtained a rapid and effectual cure from the use of the liquor arsenicalis. Since that time I have had ample opportunities of further testing the value of this remedy in cases of English cholera, presenting symptoms so severe that, had the Asiatic form of the disease been prevalent at the time, there would probably have been no hesitation in referring the cases in question to that particular type. In all these cases the arsenical treatment was followed by such rapid subsidence of the symptoms, and by such quick and complete restoration to health, that I have been led to regard arsenic in the light of a *specific* for cholera.

"It is not in the milder forms of the disease, which are traceable to disturbing ingesta that arsenic will be found beneficial; but in those severe and aggravated cases which occur in the narrow alleys, badly drained, ill-ventilated dwellings, amidst the filth, poverty, and squalid wretchedness of certain districts of most towns.

"In the absence of necessary sanitary measures, in the conditions favorable to the generation of animal and vegetable poisons, and in the presentation of foci from which the diffusion of such poisons may take place, Chesterfield is not surpassed, if equalled, by any other inland town of similar size within the United Kingdom. It is a fact confirmatory of this remark, that at no time within the last twelve years has the town been entirely free from typhoid fever; that this form of fever and epidemic typhus ravage the place at intervals of one to two years; that here scarlatina assumes its malignant form; that epidemic dysentery is not uncommon; and that during the summer and early autumnal months the cases of cholera are numerous, and many of them extremely severe. As an example of the last-mentioned disease, I detail the following case, which occurred in my practice in August last, and which, as one amongst many such, shows alike the character of cholera as it occurs in Chesterfield and its neighborhood, and the value of arsenic as a remedial agent:—

CASE.—J. P—, æt. 42, by trade a master potter, was seized on August 13th of the present year with violent vomiting and purging, accompanied by frequently-recurring pains in the abdomen, and by general collapse. The dejections were thin, watery, somewhat offensive in odor, and contained a moderate proportion of bile. The vomits consisted of food previously taken, with certain admixture of a thin mucoid fluid.

These symptoms were combated by lead and opium, chalk mixture with catechu, friction, the application of external heat to the extremities, sinapisms, and turpentine stupes to the abdomen, and by weak cold brandy-and-water to drink. Despite the diligent exhibition and application of these remedies, the symptoms increased in severity from hour to hour. In the morning of the following day, I received an urgent message to attend immediately, as, in the opinion of his friends, the patient would die. On arriving at his home, I found him in the greatest collapse, with countenance pale, livid, and of a leaden hue; eyes glassy and sunken in their orbits; nose nipped; tongue pale and besmeared with a thin layer of mucus; breath cold; great thirst; skin cold and soddened, with a clammy perspiration; voice reduced to a thin, slender, *squeaking note*; pulse thready, running, and incapable of being numbered. *The dejections are involuntary, almost constant, left little or no stain upon the*

bed-linen, of a faint, sickly odor, and evidently consisted of a serous fluid. The vomits were frequent, and of a thin, pale, sero-mucoid fluid; the cramps, which seemed to affect the whole muscular system were rapid, powerful, and agonizing in their character. Suppression of urine had existed for fifteen hours.

I gave immediately six drops of the arsenical solution, repeated the dose in ten minutes, and again in twenty minutes more. Directly after swallowing the third dose, the patient, with a slender, tubular voice, ejaculated: "There, that will stay." He was right; it did stay, and from that moment the vomiting ceased. The arsenic was now repeated at intervals of half an hour. By and by the cramps and purging ceased, the sphincter ani recovered its power, warmth began to diffuse itself over the surface of the body, the pulse became steady, distinct, and numerable; and, at the end of two hours, I left my patient in comparative safety. During the night the arsenic was continued in three-drop doses every third hour. On the following morning I found that there had been no repetition of either vomiting or purging, and that the renal secretion had been restored during the night. Two days afterwards he was able to leave his bed; but his convalescence was marked by anasarca, the result of the action of the choleraic poison on the vitality of the blood, and of the great diminution of its solid constituents by the copious evacuations which occurred during the urgency of the attack.

"Now, this case occurred in a dwelling which stood upon a dead flat of ground, from three to four feet below the level of the contiguous road, which had consequently no fall for drainage, and the cellar of which stood one or two feet deep in water during rainy weather. Its occurrence arose after a heavy fall of rain, and when the imperfect drains in question emitted an almost intolerable smell. It is, therefore, fair to presume that it had its origin in some noxious emanation from the drains, with which the circumambient air became impregnated, and thus acquired the power of injuriously impressing living bodies.

"To destroy such a poison in the blood, I gave to the blood a poison, which acted in accordance with a well-known physiological law, and cured the disease.

"I have done so in many such cases, in which the ordinary remedies for cholera had entirely failed, and I have invariably found that the arsenic exerted a rapid power of control over the vomiting and purging, and quickly brought about a state of convalescence.

"From such data, then, I maintain the *specific* action of arsenic in the very worst form of English cholera, and I thence infer for it a similar power in the malignant type of the disease.

"The instructions for its use are simple and precise. For the Asiatic cholera, ten or fifteen drops in cold water, every ten or fifteen minutes, until vomiting and purging abate, and then smaller doses, at more distant intervals, until reaction is established."

ART. 18.—*A new Treatment of Cholera.* By Mr. BOATE, late one of the Surgeons to the Inniskillen Dragoons.

(*Lancet*, Aug. 8, 1857.)

This is the groundwork of Mr. Boate's treatment in every stage of cholera: "First begin with an emetic, followed (after the action of the emetic has ceased) by an opiate—say thirty to forty minims of tincture of opium, and thirty minims of sulphuric ether, to two ounces of water. If this does not rest on the stomach, a pill, composed of three grains of calomel and one grain of opium, is to be given. This will often remain on the stomach when nothing else will. But what is to be done in collapse, when the pulse is small and thready, respiration almost suspended, and lividity pervading the whole system (the circulation being impeded owing to the contracted state of the lungs)? Chloroform is the grand remedy. But how does it act, or how should it be administered? It is given by inhalation, carefully marking or watching the effect upon the pulse. Now, the first effect of chloroform is a strong stimulant, the pulse becoming full and bounding, where before its use it could hardly be felt. You must prolong

its application as long as the pulse is full, and the moment it begins to sink withdraw the chloroform; alternately repeating and withdrawing the stimulant until the patient lapses off to sleep. I may also add, that in a case of incessant vomiting, where nothing will remain on the stomach, a full opiate, say thirty or forty minims of tincture of opium in combination with half a drachm of ether; may be given in a little water, and then the chloroform administered, which instantly checks the vomiting; and this action being kept up the opium becomes absorbed, and sleep very soon follows."

"This," says Mr. Boate, "I maintain is a *new treatment*, and one which I invariably adopted during the cholera epidemic at Varna (where I was in charge of Her Majesty's 6th Dragoons), and with such results, as the Army Medical Board returns show, that out of sixty-two cases of genuine Asiatic cholera I only lost nine patients (about 14 per cent.)"

(c) CHRONIC DISEASES.

ART. 19.—*On Spanæmia, Chlorosis and Analogous Conditions as the Predominant Characteristic of the Present Age.* By Dr. POLLITZER.

(*Zeitschr. der k. k. Gesellsch. der Aerzte*, Feb., 1857; and *Medico-Chir. Review*, July, 1857.)

"Dr. Pollitzer takes a very gloomy view of the condition of the human race at the present time, and considers it to be an established fact that the physical deterioration in Europe is profound, 'a sad memorial of civilization.' He admits the general diminution of mortality in all civilized countries, but affirms this to be a fallacious test, as there is not a corresponding increase in the health and vigor of the race, or in the number and character of the diseases. The reduction of the mortality, the author attributes to the increase of hospitals and similar charitable institutions—to quarantine, vaccination, and numerous sanitary regulations. The boundaries of health and disease, he observes, are daily becoming less marked, and he considers it characteristic of modern pathology to affirm that there are numerous conditions which are undoubted deviations from the healthy standard, though it is impossible to delineate or give definite portraits of them, because they make their appearance during a state of 'relative health.' The physician has no name for the disease, but the patient maintains that, not feeling in health, he has no alternative but to call himself ill. This anomalous condition, Dr. Pollitzer accounts for by the spanæmia and chlorosis, which he regards as the feature peculiar to our times—the soil in which the feebleness and deterioration of our race take root. After developing his views more in detail, the author proceeds to show how these conditions are fostered by modern civilization. A constant stretch of the mental powers—a restless excitement of the passions—a perpetual struggle for advancement—the fresh wants of every day, science and the arts themselves being subservient even to the luxury and demoralization of the times—the destruction of all moral harmony and peace—are advanced by Dr. Pollitzer as the evils of modern civilization. And these evils react especially upon the younger generation; and the demands made upon the youth of eighteen or twenty of the present, would formerly have been considered a sufficient tax for the strength of a man of upwards of five-and-twenty. He inveighs especially against the polymathy (if we may coin the word) of children, among whom the spanæmia and chlorosis of the age especially flourish.

"Having for seventeen years devoted himself to the study of children's diseases, he has arrived at the conclusion that the features which characterize our age have their source in the treatment of childhood, and that the deterioration of the race at large takes its origin in that of childhood.

"The facts upon which Dr. Pollitzer bases his remarks are, that anæmia and chlorosis occur alone, or associated with rickets, hypertrophy of the lymphatic glands, and of the spleen and liver, to an incredible extent, even from the first month of life. Of 1000 children that were treated in the children's hospital, on an average 700—800, or from 70—80 per cent., were thus affected. He also observed that the anomalies of the blood and constitution, which are so widely

diffused, invariably appear where the nutrition of the child has been imperfectly affected. The stomach and intestinal tract are the parts that first suffer, hence it is in these organs that we discover the prevailing morbid conditions of childhood; and while they materially influence the mortality of children they equally affect the state of their future health when they survive childhood."

ART. 20.—*On the Proximate Cause and Specific Remedy of Tuberculosis.* By DR. JOHN FRANCIS CHURCHILL.

(*Dublin Hospital Gazette*, Aug. 15, 1857.)

The following is the abstract of a paper which was laid before the Academy of Medicine at Paris, on the 21st of July, 1857:—

The total number of cases of phthisis treated by the author amounts to 35. All were in either the second or the third stage of the complaint—that is, they had either softened tubercles or cavities in the lungs. Of these 9 recovered completely, the physical signs of the disease disappearing altogether in 8 out of that number; 11 improved considerably, and 14 died; 1 still remains under treatment.

The proximate cause, or at all events an essential condition of the tubercular diathesis, is the decrease in the system of the phosphorus which it contains in an oxygenizable state.

The specific remedy of the disease consists in the use of a preparation of phosphorus, uniting the two conditions of being in such a state that it may be directly assimilated, and at the same time at the lowest possible degree of oxydation.

The hypophosphites of soda and lime are the combinations which hitherto seem best to fulfil these two requisites. They may be given in doses varying from ten grains to one drachm in the twenty-four hours. The highest dose which I have been in the habit of giving to adults is twenty grains.

The effect of these salts upon the tubercular diathesis is immediate, all the general symptoms of the disease disappearing with a rapidity which is really marvellous.

If the pathological deposit produced by the dyscrasy is of recent formation, if softening has only just set in and does not proceed too rapidly, the tubercles are absorbed and disappear; when the deposit has existed for a certain time, when the softening has attained a certain degree, it sometimes continues in spite of the treatment, and the issue of the disease then depends upon the anatomical condition of the local lesion, on its extent, and upon the existence or non-existence of complications. The author has made numerous attempts to modify the local condition of the lungs by the inhalation of different substances, but has never obtained any satisfactory result independent of what was to be attributed to the specific treatment. The hypophosphites of soda and lime are certain prophylactics against tubercular disease.

The physiological effects which he has observed to be produced by the use of the hypophosphites of soda, lime, potash and ammonia, show these preparations to have a twofold action. On the one hand they increase the principle, whatever that may be, which constitutes nervous force; and on the other, they are the most powerful of hæmatogens, being infinitely superior to all medicines of that class hitherto known. They seem to possess in the highest degree all the therapeutical properties formerly attributed by different observers to phosphorus itself, without any of the danger which attends the use of that substance, and which has caused it to be almost forgotten as a medical agent. The different preparations of hypophosphorous acid will, according to these views, occupy one of the most important places in the *Materia Medica*.

ART. 21.—*A New Case of Amyloid Degeneration.* By Dr. RUD. VIRCHOW.

(*Archiv f. path. Anat. u. Physiol.*, Feb., 1857.)

This kind of degeneration has often presented itself to the notice of the author, but not to the same degree as in the present case.

CASE.—A woman of a certain age, suffering from Bright's disease, with

dropsy, died on the 5th December, 1856. On examination, the two kidneys, the spleen, and the liver were found to be enlarged and transformed into amyloid matter.

The spleen, weighing 473 grammes, was almost entirely transformed into amyloid matter. It had the appearance of being congealed. The small arteries of the kidneys and the Malpighian bodies had undergone the same transformation. The hepatic cells were healthy, but the small vessels of the acini were affected. The liver itself weighed 2687 grammes. The intestine presented a peculiar anæmic, translucent, palish gray, puffy appearance, and on examination the vessels of the villousities were almost all affected with the degeneration in question. In certain parts this change had extended to the substance of the coats of the bowel. The urinary and genital organs were also considerably affected, particularly the uterus, which was hypertrophied, and yellowish-gray in color. The microscopic and chemical evidences of starch were almost everywhere present.

In a word, Professor Virchow found starch in every organ examined—in the heart, in the lungs, in the nerves, &c.; and everywhere the signs were unmistakable. The characteristic blue color was brought out either by iodine alone, or by iodine in conjunction with sulphuric acid; and when the last mode of testing was employed slowly, this color remained intact for six weeks.

ART. 22.—*On the Ferruginous treatment of Primary Syphilis.*

By MR. HENRY BEHREND, of Liverpool.

(*Lancet*, Nov. 15 and Dec. 20, 1856.)

Following the example of M. Ricord, Mr. Behrend prescribes the potassio-tartrate for internal administration in the form of a solution of one part of the salt to six of water, of which two teaspoonfuls are to be taken three times a day, or according to circumstances: and he uses a solution of the same strength twice or thrice a day as a local application to the part, diminishing the frequency of the application as the case progresses towards a cure. With very rare exceptions, no other remedial agent is employed. It is necessary to give instructions to the patient to be careful in the application of the lotion, as he is extremely liable to remove the lint roughly, and take away with it an incipient cicatrix or healthy granulations.

In illustration of this practice, Mr. Behrend relates several cases, and respecting them he says, "Nearly all the cases above related remained under my supervision, as one of the medical officers of the regiment, for many months, some for a year, subsequently to their discharge from hospital. *Not one had a single symptom of secondary syphilis. I have not had a single case of secondary or constitutional syphilis after treatment with the potassio-tartrate of iron alone, either in hospital or private practice, and the only two instances in which secondary symptoms have appeared since I commenced this plan of treatment have been in cases where I combined the iron with the mercurial treatment.*"

ART. 23.—*Illustrations of the Aguish Disorder prevalent in London during the last two or three years.* By DR. C. HANDFIELD JONES, Physician to St. Mary's Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, i., No. 3, 1857.)

The author, while expressing a doubt whether the cases selected presented any very striking points, was of opinion that the series was not without value as illustrating a frequent character of disease, and he hoped that their consideration might shed some light on various morbid phenomena of common occurrence, yet but imperfectly understood and often misinterpreted; and so might render their treatment more rational and satisfactory. He wished the cases to be regarded as experiments in which the nature of the morbid action was to some extent inferred from the mode in which it was affected by remedial agents. He did not consider the evidence demonstrative, he only claimed for it that the inferences should be regarded as highly probable. Information of

this kind, though very imperfect, may after all be of far more use than the most exact determinations of the balance and the microscope.

He premised the following statements:—

1. That local heat, congestion, and sometimes inflammation, may be produced by paralysis of the vaso-motor (sympathetic) nerves of a part.

2. That the phenomena of fever can be well accounted for on the view of paralysis of the sympathetic system.

3. That there is good reason to believe that neuralgia and dysentery may be the exponents of malarious influence as much as a true ague or remittent.

4. That there is much cause for believing that the vicinity of canals is unhealthy, and that they generate a poison producing effects like those of malaria.

5. That the evidence respecting the production of malaria is such as makes it impossible to affirm that it may not be generated by any moist surface in the process of drying.

6. That in cases of obscure and refractory character, the reaction of the system towards remedies, and the effect of change of air may afford most material aid towards forming a correct idea of the cause and nature of the disease.

7. The term malarious disorder, as used by the author, is not intended to assert that the essential cause is always identical with marsh miasm; but to convey the idea of a disorder, which, however produced, is exceedingly similar to intermittent and remittent fever in many respects, maintaining the same pathological affinities, operating on the same (nervous) system, and requiring the same treatment.

8. The primary action of fever-poison, most notably of malarious fever, is paralyzing and depressing, affecting especially the nervous system. The most deadly fevers are the algide, in which reaction never occurs; the phenomena usually called febrile are, if the excitement be not over great, a desirable indication that the system rallies and resists the morbid influence. Hence, if, where there is no intense malaria, a patient suffer from continual, exceeding, causeless (apparently), depression and debility, occasional chills and flushes or perspirations, with an interlude of neuralgia at times, or a dysenteric or rheumatic attack, and if benefited materially by quinine, iron, &c., and most of all by a change to a healthy locality, the inference that he labored under some aguish disorder seems legitimate. The system is habituated to the morbid action, and does not react strongly against it.

9. The tendency to relapse is most difficult to eradicate. Any cause of a debilitating kind will almost surely reproduce the morbid action in some form or other.

He then gives the details of the following twenty-one cases:—

1. Obscure aguish disorder.
2. Rheumatic nasal inflammation.
3. Cerebral attack; epistaxis. Benefit from quinine.
4. Cerebral attack; failure of cerebral power. Benefit from ferrocitrate of quinine.

5. Vomiting; febricitation; head-pain; exposure to ague-poison. Cure by quinine and strychnia.

6. Cerebral attack. Canal influence.

7. Scrofulous; epileptoid seizures. Cure by ferrocitrate of quinine and nux. vomica.

8. Hemiplegia in a neuralgic subject. General tonic treatment. Recovery.

9. Hemiplegia, first of right afterwards of left side. Canal influence.

10. Rheumatism of the œsophagus. Canal influence.

11. Rheumatism; thoracic neuralgia; depression. Canal influence.

12. Cardiac neuralgia paralytica; slight hæmatemesis. Cure by quinine and iron.

13. Rheumatoid and intra-thoracic neuralgia.

14. Severe cardiac neuralgia; aguish attacks.

15. Periodic gastralgia. Cure by quinine and iron.

16. Rheumatic abdominal neuralgia.

17. Febrile affection; lingual neuralgia. Cure by quinine and iron.
18. Dysentery and aguish disorder. Cure by quinine and opium.
19. Dysentery; rheumatism. Crimean origin.
20. Nervous prostration; hemorrhage from stomach. Benefit from change of air, cinchonine, and strychnine.
21. Fugitive œdema recurring frequently in various parts. Cure by sustained tonic treatment.

The author then proceeds to cite ten instances in which more decided ague was originated or developed by a residence in London. In conclusion he draws the following deductions:—

1. There seems much reason to think that an obscure form of aguish disorder prevails in (at least) the western parts of London; the phenomena being chiefly great debility, hyperæsthesia, failure of cerebral power, neuralgia of external or internal parts, gastric disorders, rheumatic affections, and ill-developed febrile paroxysms. Quasi-apoplectic seizures are not uncommon.
2. Quinine, iron, and strychnine are found of decided benefit, with a generous diet.
3. Change to a pure air is the best remedy.

It must be apparent that, if there be any truth in the foregoing views, those who ignore them entirely must practise at great disadvantage, and meet with continual disappointment. The opinions advanced in the paper were mainly derived from Dr. Macculloch's writings, whose opinions are strongly corroborated by Dr. Copland.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 24.—*Case of Cerebral Apoplexy without characteristic symptoms, &c.* By Dr. HILLAIRET.

(*L'Union*, 57, 1857; and *Schmidt's Jahrb.*, vol. xcv., No. 9, 1857.)

After some observations on the rare occurrence of cerebral apoplexy without lesion of sensibility and especially without lesion of motility, Dr. Hillairet relates the following case, which is rendered still more interesting by the fact that the head affection was accompanied by gangrene of the lungs. It is to be regretted that the condition of the veins at the base of the skull and in the neck was not examined.

CASE.—The patient was a man, æt. 64, who for fourteen days before his admission to the Hospital for Incurables at Paris had suffered from acute and abiding pain in the head, with loss of appetite, but who had nevertheless been able to walk about as usual. When admitted (10th February, 1856) the eyes were brilliant and the patient talked incessantly in a loud voice, without any defect in articulation, but also without the least sense in what was said. His manner was very eager and excitable. Sensibility and motility were everywhere perfect, and the only equivocal sign to be detected beyond the head were a few moist râles at the back of the chest. Pulse 72. After free purging the excitability became diminished, and the meaning of questions seemed to be better understood, but the answers were still in disconnected monosyllables. Pulse and respiration quiet; no expectoration. The patient was bled and blistered without any evident impression upon the symptoms.

February 16th.—Intelligence and memory returned; no pain; sensibility and motility perfectly normal. Calomel had been given during the last two days, but the mouth not at all affected. The breath of a gangrenous odour. On examining the lungs, the posterior-inferior parts on both sides, especially the left, were found to be dull on percussion and filled with fine moist râles; but there was neither cough nor expectoration.

17th.—A slight rubbing sound at the inferior angle of the left shoulder-blade, and the râles which were heard over the whole of the lung on this side were especially loud at this point. No pain in the chest. Pulse and respiration

normal; also sensibility and motility. Bronchial breathing in the left axilla. The breath still more fetid.

20th.—Loss of consciousness; this came on in the evening, which chanced to be extremely cold and wild, with frost and snow.

24th.—Death, without any alteration of the previous symptoms.

Post-mortem examination.—In both pleural cavities old adhesions; the lower half of the right lung solidified and deeply congested, the upper half normal. The left pleural cavity divided into compartments by old adhesions, and one of these communicating with a large cavity in the substance of the lung, apparently the result of a previous state of gangrene. Surrounding this cavity the substance of the lung was to some extent affected with gangrene. On opening the skull a considerable quantity of serum escaped, and the membranes were found to present many firm adhesions and other signs of old inflammations. The arteries at the base were in an atheromatous condition. In the middle of the under surface of the posterior lobe of the left hemisphere was a dark spot evidently the sign of an extravasation of blood within the brain. On opening the brain the left lateral ventricle was seen to be distended with blood, and the walls of this cavity were in many places softened and broken down. A smaller extravasation was in the cornu ammoni. The rest of the brain was healthy.

ART. 25.—*On alternate Hemiplegia.* By Dr. A. GUBLER.

(*L'Union Médicale*, Sept., 1857; and *Edinburgh Med. Journ.*, Nov., 1857.)

Dr. A. Gubler, Professor "Agrége" of the Faculty of Medicine of Paris, describes a variety of hemiplegia which he has denominated "alternate," in imitation of the term employed by botanists, in reference to the mode in which the leaves are arranged on the branches of some trees. The peculiar characteristic of this form of the disease, consists in the face being paralyzed on the opposite side to that on which the limbs are affected—the general rule being, that both the face and limbs are paralyzed on the same side.

Dr. Gubler details a case which occurred in his own practice, and cites others recorded by Professor Forget, M. Poisson, and M. Senac, and as the result of his inquiries, comes to the following conclusions:—

1. Cerebral hemiplegia, properly so called, is always confined to one side.
2. In the less numerous variety of cases of alternate hemiplegia, the lesion is situated in the pons Varolii.
3. The lesion always exists, exclusively or principally, on that side opposite to the paralyzed limbs, and on the same side as that on which the face is affected.
4. Sensation and motion may be impaired on one side of the face, in consequence merely of the pons Varolii being affected as well as when the disease implicates the nervous trunks themselves. In this way, alternate hemiplegia should be considered as indicative of some lesion in this structure.
5. From the connection of these two facts in the history of facial paralysis, namely, that the action crosses in lesions confined to the cerebral hemispheres, while it is direct in those of the meso-cephalon, it follows that the facial nerves cross each other in the substance of the "isthmus." Above the decussation, the action is crossed; below it is direct; nothing is more easy to be understood.
6. This inference, legitimately drawn from pathological facts, is moreover warranted by the latest researches of anatomists who have attempted to elucidate this matter, both in France and Germany, particularly the results obtained by MM. Vulpian and Philippeaux.
7. Pathology further exhibits to us that the decussation of the facial nerves must be complete, since lesions of the pons Varolii entail complete paralysis of the corresponding side of the face, to the exclusion of that opposite.

ART. 26.—*A case of Hemiplegia with Paralysis of the same side as that of the Cerebral Lesion.* By Dr. EADE, Physician to the Norwich Dispensary, &c.

(*Lancet*, Aug. 8, 1857.)

This case appears to be a genuine example of that very rare condition of

disease, in which the paralyzing lesion exists on the same side of the body as the paralysis itself. So rare is it, that Dr. Watson ("Lectures on Physic," vol. i.) refers to only two such cases, Dr. Todd (article Paralysis in "Cyclopædia of Medicine") to only four, and Dr. Bennett (in "Library of Medicine") speaks of being acquainted with only twenty-one similar ones as having ever been published. Moreover, the tone of all the authors whom Dr. Eade consulted on this subject was such as to imply a doubt of the authenticity or trustworthiness of the descriptions in these exceptional instances, or at least to cause it to be inferred that even in them the real paralyzing lesion existed (though perhaps overlooked or unappreciated) as usual in the opposite hemisphere.

It may, perhaps, be urged that as in this case a distinct lesion was found after death in the right half of the brain, therefore there is no need to suppose any exceptional direct, instead of crossed, nervous influence. But it appears that, although such an explanation of the phenomena is *possibly* the true one, yet the whole train of symptoms during life, as well as of the morbid appearances after death, are entirely opposed to such a supposition; for—

1. The primary seizure was one of acute disease, apparently hemorrhage, with either active congestion or inflammation, and probably of a gouty character.

2. The paralysis came on suddenly, and was doubtless due to the clot found on the outer side of the left corpus striatum. This clot was small (thus accounting for the slight affection of consciousness), and had not the appearance of being a hemorrhage resulting from softened brain substance; for although not distinctly encysted, the cerebral matter immediately around it was sufficiently dense, and it was only externally to this that it became very soft and diffuent.

3. The amount and degree of softening were infinitely greater on the left side than on the right.

4. The mass of tumor in the left hemisphere was as large as a good sized walnut; that in the right scarcely bigger than a pea, and utterly insignificant in comparison with the other.

5. The paralysis of the eye and eyelid, a few days after that of the limbs, was on the left side.

6. There was no atheromatous disease of the cerebral arteries.

7. It is worthy of remark, that the former attack of paralysis of the arm was on the left side, and that the morbid appearance which best accounted for this—viz., an old organized patch or lymph on the inner surface of the centre of the parietal bone, was on the left side also.

For all these reasons, Dr. Eade inclines strongly to the opinion that the paralyzing lesion existed in the left hemisphere, that the disease found in the right was secondary in point of time, and that the influence exerted upon the limbs was direct instead of crossed. Dr. Eade also regrets that he did not examine minutely the medulla oblongata, with a view to the possibility of the existence of an abnormal arrangement of the fibres of its anterior pyramids (a possibility suggested by Dr. Bright), which, if present, would form a ready explanation of the direct influence exerted in the two attacks of paralysis.

CASE.—J. G., æt. 34, a well formed and average-sized man, by trade a plasterer, became a patient at the Norwich Dispensary, in September, 1856, on account of a recent attack of head-symptoms accompanied by hemiplegia. His history was this: For many years previously he had suffered from occasional attacks of what he called rheumatic gout, the last having occurred only a few weeks before the present seizure. Although not exactly intemperate, he had always been in the habit of drinking freely of beer. Ten or eleven years ago he had chancres on the penis. Two years after this he had a slight attack of paralysis of the left arm, from which he soon recovered. Three years later he suffered from ulcerations of the scalp; and after these had healed he remained in good health until about five weeks since, when he began to suffer from headache, chiefly frontal, with drowsiness and disturbance of the function of sight. This was followed by an attack of sickness and diarrhœa; and after recovery from this, he, four days ago, suddenly found himself unable to articulate, and paralyzed in the left arm and leg. There was no hereditary predisposition to gout or apoplexy, and no known cause for the present attack.

Symptoms, when first seen by me on September 8th, four days after seizure: Hanging of left cheek; indistinct articulation; inability to whistle or blow with his mouth; slight numbness of the paralyzed cheek; protrusion of tongue to the left side; paralysis of left arm and leg, complete as to motion, less absolute as to sensation; diminution of reflex action in paralyzed leg; pain of head, referred to the vertex, with much heat of scalp; dilatation of pupils, these being equal, contracting considerably when first exposed to strong light, but almost immediately returning to their former state; labored and weak pulse, at 60; easy respiration; consciousness unaffected, and intellectual power very slightly impaired. No sign of lead poisoning or of heart disease.

In the interval between the commencement of his illness and his death—a period of nearly eight months—he suffered repeated exacerbations of the symptoms of congestion and pressure within the head. About a week after his seizure, he for a short time completely lost the sight of the left eye, the pupil becoming larger than its fellow, and the upper eyelid drooping. Soon after this, the reflex actions in the paralyzed leg became completely abolished.

In October, he suffered from severe pain, without either swelling or redness, in the right knee, which lasted several weeks, and was quite uninfluenced by remedies.

In December, several spasmodic or convulsive seizures occurred, and in one of them he was found stretched across the bed almost in a state of opisthotonos. His mind had now become much enfeebled, and he had a distinct attack of gouty inflammation in the left elbow.

In January, 1857, he continued to become more and more childish. The sphincters were only imperfectly under control. He had a slight cough, and was observed to be losing flesh fast.

In February, the flexor muscles of the paralyzed arm had become very tense and rigid, so that attempts to straighten the limb caused very great pain. Voluntary power over the leg was much increased.

He died in April, sinking gradually from exhaustion, death being preceded by expiratory puffing of the cheeks, frequent convulsive tremors of the muscles of the neck and face, apathy and imperfect coma.

Dissection, April 25th, 1857, twenty-four hours after death.—Head: The parietal and frontal bones marked on their outer surface by several pits or depressions, the largest as big as a shilling, evidently cicatrices of old ulcerations. At these places the bone was found to be quite thin and translucent; and to the inner surface of one, situated in the centre of the left parietal bone, the dura mater was adherent by an old organized patch of lymph. The arachnoid milky nearly everywhere, and quite opaque where it covered the right hemisphere and the base of the brain. A large elongated patch of enormously developed Pacchionian bodies on the internal edge of right hemisphere, to which the dura mater adhered intimately. At the base of the skull, in one small spot upon the posterior part of the right petrous bone, the dura mater was almost absorbed, leaving only the transparent arachnoid membrane. The anterior surface of both petrous portions of the temporal bones so much thinned by absorption as to leave the slightest possible covering of areolated bone to the internal ear. Pia mater vascular; the cerebral substance somewhat congested; no apparent disease of the arterial system. On opening the left lateral ventricle, the corpus striatum and adjacent part of hemisphere were seen to be more prominent than natural, and had a gelatinous appearance, as if both œdematous and softened. At the junction of the left corpus striatum with the hemisphere was found the remains of an old clot, the size of a horse-bean, the blood being semi-fluid, and like to inspissated bile. The cerebral substance around it was softened, but not discolored; the substance of the corpus striatum itself was infiltrated with serum, and softened, and occupying its outer and anterior part was a firm, greenish-yellow tumor of irregularly elongated form, about equal in bulk to a walnut, and surrounded by softened and discolored brain. On the right side, situated in the hemisphere, just external to the corpus striatum and optic thalamus, was a small mass, similar in appearance to that found on the other side, consisting of two small rounded nodules, the size of swan-shot, adhering together by a sort of pedicle, and surrounded by soft-

ened cerebral substance.—Chest: Old adhesions of pleuræ, chiefly on the left side. At apex of the left lung were some small tubercular masses, some of them in a state of incipient calcification.—Abdomen: Liver large, adherent by old false membranes, to the peritoneum, its structure glandular and almost nutmeggy; kidneys large and congested; a little purulent fluid in the pelvis of the left.

The cerebral tumors appeared to be composed of a low form of fibrinous exudation, and showed, as their microscopical elements, a granular blastema, containing a large quantity of free oily-looking dots and granules, and corpuscles of various sizes and shapes, containing granular matter, and the same bright looking dots, so many of which were seen floating free.

ART. 27.—On slowness of the Pulse as an effect of Compression of the Brain. By M. C. H. VON ZENGERKE.

(*Archiv für Physiolog. Heilkunde*, t. 2, 1857.)

On examining certain dogs in which an opening had been made in the skull, M. Zengerke found that the pulse invariably became retarded when the brain was pressed upon by the finger. This phenomenon, he considers, is accounted for by the compression of the par vagum under the brain, and not by any direct effect of the pressure upon the brain itself.

ART. 28.—A case of General Anæsthesia. By Dr. KLAATSCH.

(*Deutsche Klinik*, No. 45, 1856; and *Med. Times and Gaz.*, June 20, 1857.)

CASE.—Dr. Klaatsch relates the case of a widow, æt. 58, who applied to him on account of severe pains in the extremities, and a powerless state of the upper ones, which prevented her from grasping any object firmly. She also complained of an unrelievable sense of hunger. In other respects, with the exception of occasional headaches, she was quite well. She had had nine children, still menstruated moderately, and exhibited no symptom of hysteria. A charwoman by occupation, she attributed her present symptoms to chills. An examination exhibited no appearances of paralysis, but the sense of feeling was lost over the entire skin and orifices of the mucous membranes, and could not be excited by pricking with needles. No unpleasant feeling was excited by irritating the nares, the conjunctivæ, or the mucous membrane of the mouth, and the fumes of ammonia produced no effect upon the respiratory organs. Boiling water and a prolonged application of the electrical pencil alone induced some feeling on the surface. The sense of contact was retained, and she was enabled to exactly indicate the spots at which she had been pricked. The power of distinguishing between differences of temperature was abolished, but the muscular sense remained, as she was conscious of the position of her limbs, and could determine the weight and size of a body by grasping it. The senses of taste and smell were lost, and both hearing and vision were somewhat defective, although she had not before observed diminution in their power. The reflex excitability was very slight, the rapid application of hot sponges exciting but slight movements; tickling the fauces did not induce any disposition to vomit.

After the patient had remained some time under observation, and her condition was found to be stationary, the Russian vapour-baths were tried, but without any avail. The electrical pencil was next applied to the two forearms and the left side of the face; and after three *séances*, not only was feeling restored to these parts, but it was recovered also by the remainder of the surface and the mucous membranes; taste and smell were restored, and the sense of unappeasable hunger disappeared.

Most of the analogous cases on record have been observed in hysterical subjects; but in this one no symptoms of hysteria whatever were present.

ART. 29.—*Case of Sciatica treated by Subcutaneous Opiate Injections.* By Dr. BONNAR, of Cupar, Fife.

(*British Med. Journal*, Aug. 29, 1857.)

Before adopting the treatment by subcutaneous injections, as recommended by Dr. Alexander Wood (v. "Abstract" XXI. p. 39), two months had been passed in a fruitless attempt to obtain relief by other means—iron, iodide of potassium, colchicum, arsenic, &c., internally; aconite, irritating liniments, cauterization, &c., externally. The patient, Mrs. P—, a stout, active lady; age not given. The time, October 6th, 1857. The effect of the subcutaneous injections are thus described:—

"Having ascertained which was the most painful spot, by means of careful pressure along the seat of pain, just where the nerve escaped through the notch from the pelvis, he inserted the perforated steel nozzle of a small glass syringe, into the graduated body of which had previously been put twenty minims of Battley's sedative solution; and after the instrument had penetrated about an inch and a half, the fluid was sent home with gradual and firm pressure. The effect was instantaneous. The patient immediately began to saw the air with her hands, as if in a deep dream; in a few seconds they dropped powerless; her breathing became long and deep, and she lay in a profound sleep. This continued until an early hour next morning, when she awoke refreshed and reinvigorated, as if from a night's natural rest, the first she had had for many a long week; to her great delight, she was completely free from pain, and able to move her limb very readily without uneasiness. This was, however, too sudden and too complete to be expected to last long; there was still an acute tinge of pain when the thumb was pressed firmly down on the spot; but the patient was so delighted with the general effects of the treatment, that she readily, nay, anxiously, submitted to its frequent repetition.

"Oct. 6th.—7 A. M. Twenty minims of Battley's solution were injected into the hip, which did not seem to produce the same immediate effect as last night's application.

"6th.—8 P. M. The patient had slept most of the day. The pain had disappeared; it was very obtuse at the hip on pressure, and more acute down the limb, but not at all of that lancinating character it was before. As the peroneal nerve seemed to be the part in which there was most pain, ten minims of Battley's solution were there injected, and the patient was left for the night.

"7th to 10th.—The same treatment was continued morning and night, injecting at the one visit into the hip, and at the other into the leg, choosing the most painful parts, as indicated by pressure. The quantity was increased to forty minims daily.

"11th.—The remedy was intermitted; but the pain, on the day following, threatening to return a little more severely than before, it was resumed for four days more, at the end of which time the pain had entirely disappeared (even on testing the state of the nerve by a smart blow) from the regions of the hip and leg, and was confined to the region of the external malleolus. The treatment was discontinued from this date, with the exception of two occasions, October 20th and 23d, when on the former twenty, and on the latter thirty minims were injected in front of the tendo-Achillis, where the pain lodged very severely, but was relieved by the injection.

"After this, the pain seemed to spread itself all over the dorsum of the foot, where at times it was very severe. Instead of further employing this new cure, which seemed to be now inapplicable to the case, from the very superficial seat of the pain, and the great extent of surface over which it spread, I recommended the cold douche every morning, and to be continued each time as long as it could be borne by the patient. This was faithfully persevered in, and after a short period the pain became much modified, and of quite a chronic character; in fact, it seemed to degenerate into a kind of nervous rheumatism of the part, and indicated the changes of weather in regard to rain, frost, thaw, &c., by those peculiar gnawing sensations which all martyrs to rheumatism so well know by their experience.

"At this date (August, 1857), nearly two years after the occurrence of the above case, the patient enjoys very excellent health, and never experiences the slightest throb or pain in the limb. She told me jocularly, not long ago, that she almost forgets which limb it is which was affected."

ART. 30.—*Tubercles of the Crus Cerebelli, with symptoms simulating Chorea.*
By Dr. SHUTE, Physician to the Torbay Infirmary.

(*Lancet*, July 18, 1857.)

Tubercle of the brain, though common in children, is rare in adults. Many of the cases recorded moreover are not sufficiently exact to be of much value. Dr. Shute's case is as follows:—

CASE.—Elizabeth S—, æt. 26, married three years, no family, was admitted under my care March 11th, reported to be suffering from chorea. She presented the following appearance: Countenance not sunken nor pallid, and not evidencing pain; features not distorted; muscular and adipose tissues sufficiently developed; tongue furred, protruded with a jerk; head constantly moving to the left side; articulation very imperfect; understands and answers everything that is said to her; constantly talking whilst awake; left arm in perpetual movement, being jerked across the chest (during sleep the convulsive movements cease, and she is quite tranquil); total inability to support herself on her legs, but she can move them up in the bed; sensation not affected; has a constant short cough, as if caused by accumulation of mucus; pulse 90; urine acid; no albumen. There was much difficulty in examining the chest. Left side appeared duller than right; mucous and sub-crepitary râles, with respiratory sounds of the diffused blowing type, on that side.

The history of the case was very obscure. We could not ascertain that she had ever complained of headache; had had occasional cough for two years; had never spat blood. Four months since, whilst out walking, she suddenly fell against a wall, but without loss of consciousness, since which time she has been in her present condition.

Diagnosis.—Organic disease at the base of the brain, probably softening, near the pons Varolii; tubercular disease of the left lung. She was ordered blisters to the calves of the legs; compound ipecacuanha powder, ten grains.

March 12th.—The Dover's powder had been repeated, and at the period of the visit she was in a profuse sweat, and in a quiet sleep; the movements of the arm had ceased.

13th.—Still quiet, takes her food when roused.

14th.—Very noisy; movements of arm and head have recommenced. Ordered, acetate of morphia, potassio-tartrate of antimony, of each one grain; water, one ounce; one drachm to be taken every three hours till she was quiet.

15th.—Only two doses of mixture have been taken, and she was in such a state of prostration as to require brandy and ammonia to rouse her.

16th.—Recovered from the state of prostration; movement of arm had ceased, and did not return; right pupil dilated; contracts under the influence of light, but dilates again immediately.

She died on the 6th of April.

Autopsy forty-eight hours after death.—Vessels on convexity of brain congested; arachnoid membrane adherent along the upper and posterior edge of the longitudinal fissure; no evidences of recent inflammation of the membranes; consistence of brain firm, somewhat congested; no effusion into the ventricles; in slicing downwards, no appreciable lesion discoverable. At the base of the brain the right crus cerebelli was softened to the depth of a line on its anterior aspect, and in its substance were imbedded three crude tubercles the size of a pea, one in the centre, and two on each side, forming a triangle. The lungs were not taken from the thorax, but the posterior portion of the left was infiltrated with crude and softened tubercles.

ART. 31.—*Case of Hysterical Tetanus.* By Mr. EDWARD FURLEY, of Town Malling, Kent.

(*Proceedings of the Royal Med.-Chir. Society*, vol. i., No. 3, 1857.)

CASE.—The subject of this communication was one in which symptoms of what appeared to be in the first instance aggravated hysteria, were ultimately associated with others more distinctly tetanic. As a child, she had, at two years of age, an attack which was supposed to be encephalitis. At seven, she had severe scarlatina, followed by discharge from both ears. She grew up a delicate girl; menstruation appeared at twelve; and at this time nervous symptoms began to show themselves. At the age of sixteen her more serious illness began, after severe mental shock, with pains in the pelvic region of spasmodic character; in consequence of which she would jump out of bed, and run about the room screaming violently. There were various anomalous symptoms observed in succession, in which she seemed to undergo much suffering, and her screams were occasionally such as to alarm the neighbors.

"In the month of June, 1855," says Mr. Furley, "I took her to London, and held a consultation on her case with an eminent physician whose practice and investigations were more particularly connected with the diseases of females. This gentleman regarded the case as one of severe hysteria, but that there was no organic disease of the uterus. His prognosis was unfavorable, and, with his approbation, she went to Hastings, where she remained for seven weeks. At this time her circulation was feeble, and there appeared no disease of the heart; the appetite in some slight degree returned, but she was not otherwise improved; on the contrary, the screaming fits and convulsions were increased in frequency and violence; globus hystericus at times threatened suffocation, and she complained of pain and palpitation about the heart. At this time spasmodic contractions of the lower extremities came on, and she had some delusions, such as an appearance of the sprinkling of blood upon the wall, a duplicate likeness of herself, or rather her *very* self walking about the room; her fingers occasionally moved as if at crochet work, and she repeated lessons which her governess had taught her years before. At this stage of her illness she was seized with attacks of head-shaking, or a frequent bowing of the head forwards, so that the chin struck the first bone of the sternum with an audible jerk. This movement I witnessed myself on one occasion; and I have been told that as many as from three to four hundred of these noddings have been counted in succession, occurring almost as frequently as the pulse. On one occasion, when sickness had been induced by an emetic, the jaw was dislocated, and I was sent for and reduced it in the ordinary way.

"After she returned home her general health and symptoms improved a great deal for about a fortnight; she took exercise daily in a pony-chair, and her appetite improved also. For three nights only she was free from the contractile pains; she slept well, enjoyed her food, and great hopes were entertained of some decided amelioration: unfortunately, on the fourth night her rest was disturbed by some intoxicated persons shouting below her window; they threw also a stone which shattered the glass, after this all the old symptoms gradually returned with more violence than ever, and the curious methods in which she sought a temporary relief from them are almost beyond belief. At one time she would desire to be placed before a table, where she would kneel for some time, bearing down with considerable force, like a person in labor, until she sank on the floor in a state of insensibility; at others she would lie on her face, with her legs secured to each bed-post, and kept as much on the stretch as it was possible; she felt then "as if she was being *hacked* asunder;" when the legs were released they were drawn up forcibly, heels striking against the back. At other times she preserved a straight and rigid horizontal posture; her breathing was slow, and she seemed to be asleep, but suddenly she would utter a loud shriek, rock herself violently to and fro, and frothy saliva would issue from her lips; opisthotonos followed, the back of the head more nearly approaching the heels than I have ever seen, except in young

children brought up as posture exhibitors. Emprosthotonos was less frequent, and did not last so long.

"Once more she was taken up to London for advice, and she saw the physician of one of the hospitals, who was desirous of trying the effect of isolation from her family, but her relatives could not make up their minds for her to remain. From November, 1855, to September, 1856, she found the head relieved from what she called a 'rushing of hot blood,' by being suspended from the canopy of the bed; at first she was satisfied by being slung by the hands and legs, like a hammock, whilst she inclined the head downwards; she next directed that her feet should be fastened to the top of the bed, whilst her head hung down and nearly reached the floor; in this posture she would never remain less than an hour, till her face became livid, and sometimes the contents of the stomach were ejected; when exhausted, she directed her friends to replace her in bed, where she slept, or became for a time unconscious. During the last three months of her life she would ask to be lifted out of bed, and would glide in a serpentine way on her back over the floor, saying that she felt irresistibly drawn along, complaining all the time of excruciating pain along the spine, for which she requested the attendants to strike her a succession of sharp blows on the back; after this there was a series of paroxysms—the legs drawn apart with violence to their extreme limit, emprosthotonos and opisthotonos occurring, and convulsive actions of every part of the body. Within a fortnight of her death, although much reduced in strength and bulk, she suddenly vaulted on her feet from the horizontal posture, without appearing to flex her limbs in doing so. In the early part of her illness she complained of pain in the epigastric region, increased after eating, which gradually became more and more severe. Her diet was very scanty, and of the most miscellaneous description, but there was no craving for out-of-the-way things. Fruit, vegetables, and fish, were her usual food; for a fortnight she lived on tea and dried cherries. When the pain came on she had no relief until it was followed by sickness, unless she took strong aperient medicine. When my attendance ceased she got into the habit of swallowing a number of Morrison's pills as soon as she had taken the one meal a day which she restricted herself to: commencing with four for a dose, she gradually increased them to the almost incredible number of from 170 to 175 per diem!

"In the summer of 1856 she suffered much from tympanites. What she vomited was at first merely mucus and food; in September it was once stercoreaceous, and this happened again two months afterwards.

"She slept very little, and generally dreamt, but awoke quietly and collected; she was then very soon attacked by violent spasms. In the paroxysm the eyeballs were generally drawn up, and the eyes prominent; there was twitching of the features, and the teeth ground audibly; the tongue was not often bitten, but occasionally it was drawn out. She swallowed with tolerable facility when free from the attack. There was aphonia for a few hours at times, but this was a consequence of exhaustion. Whilst at Hastings, her attacks resembled catalepsy in some degree. There was never hiccough or active delirium; her reasoning powers were unaffected; she sometimes took a prejudice to her mother, but this ceased during the last year. For thirteen successive hours she has been insensible, but she did not then appear comatose—more like 'a person in a trance.' At one time homœopathy was tried by one of its professors, but she soon lost faith in it, and, I need not add, derived no advantage from it. From Thursday, the 12th, to Saturday, the 14th of February, she took no food; the bowels became relaxed, and continued so for two days, producing much exhaustion; the last sensation she complained of was of something being torn from her right hypochondrium. No convulsive attack preceded her dissolution, she was perfectly aware of its approach, and anxiously looked forward to the end of so much suffering and distress. There was great restlessness, and she had as many as four warm baths in quick succession; and at length death ensued from simple asthenia, at the age of eighteen years and eight months."

Post-mortem examination.—Emaciation extreme. Cranium large and thin; arachnoid opaque; a good deal of subarachnoid fluid. Brain large; lateral

ventricles each containing about half an ounce of serum; substance normal. Spinal cord was firm and natural in every portion; arachnoid opaque. The heart was small, but healthy; slight pleural adhesions at the upper part of the chest, and firm consolidation of one portion of the right lung. A pouch-like dilatation of the duodenum existed at its lower portion; in other respects all the abdominal viscera were healthy. The uterus was small, but showed no indication whatever of disease.

ART. 32.—*Camphor in Tetanic Spasms.* By Dr. J. S. PERRY.

(*Charleston Med. Journal and Review*, May, 1857.)

Dr. Perry relates two cases of tetanic spasms, in which camphor in four, five, and seven grain doses was given every four hours, but calomel, opium, compound ipecacuanha powder, chloroform inhalations, chloroform liniments to the spine, warm baths, &c., were associated with the camphor, and therefore it is difficult to say how much of the success is attributable to the camphor, at the same time we think it desirable to refer to the fact, not only because camphor had already been employed with apparent advantage in tetanic symptoms arising from strychnia (*v.* "Abstract," XXV. p. 50), but because we think the successful treatment of any form of tetanus demands the employment of stimulating remedies like camphor.

ART. 33.—*On the use of Bromide of Potassium in Hysterical Epilepsy.* By Sir CHARLES LOCOCK, Bart.

(*Medical Times and Gazette*, May 23, 1857.)

At a late meeting of the Royal Medical and Chirurgical Society, after a paper on epilepsy, Sir Charles Locock made the following remarks upon a form of epilepsy which he calls "hysterical epilepsy," and upon the use of bromide of potassium in its treatment:—

"There was," he said, "a form of epilepsy to which special notice had not been drawn, and which he had been in the habit of regarding as hysterical epilepsy. It was confined to women, and observed a regularity of return connected with the menstruation. It was as baffling a form of epilepsy as any other. The paroxysms only occurred (except in the case of great mental excitement) at the menstrual period. Having been often baffled in those cases, of which he had seen a considerable number, he had been led within the last twelve months to try a remedy, which had so far answered his expectation that he thought it desirable that it should have a larger trial, by being made known to a larger number of persons. Some years ago he chanced to see a paragraph in the 'British and Foreign Medical Review,' giving an account of some experiments that a German had been making with bromide of potassium. He found that by taking ten-grain doses three times a day for about a fortnight he became impotent, but upon leaving off the medicine his powers returned; he tried a similar experiment with others, and a similar result was produced. He (the President) accordingly thought he would try bromide of potassium in many hysterical cases that he met with unconnected with epilepsy, in which there was a great deal of sexual excitement and disturbance, attended with various distressing symptoms difficult to manage; and he found that from five to ten grains given three times a day had the effect of calming the excitement to a very marked degree. About fourteen months ago he was applied to by the parents of a lady who had had hysterical epilepsy for nine years, and had tried all the remedies that could be thought of by various medical men (himself among the number) without effect. She began to take the bromide of potassium last March twelvemonth, having just passed one of her menstrual periods, in which she had had two attacks. She took ten grains three times a day for three months; then the same doses for a fortnight previous to each menstrual period; and for the last three or four months she had taken them for only a week before menstruation. The result had been that she had not had another attack during the whole of the period. He had tried the remedy in four-

teen or fifteen cases, and it had only failed in one, and in that one the patient had fits not only at the times of menstruation, but also in the intervals."

ART. 34.—*Analysis of fifty-two cases of Epilepsy observed by the author.* By Dr. SIEVEKING, Physician to St. Mary's Hospital.

(*Proceedings of the Royal Med.-Chir. Society*, vol. i. No. 3, 1857.)

The 52 cases analyzed had occurred exclusively under the author's own observation, and the conclusions were limited to points with reference to which satisfactory evidence could be obtained.

Sex.—24 were females, 46.15 per cent.; 28 were males, 53.84 per cent.

Age.—The following is the distribution of the cases throughout the different periods of life: Under 10 years, 17; from 10 to 20, 19; 20 to 30, 4; 30 to 40, 4; 40 to 50, 7; over 50, 1; or from infancy to the age of 20 years inclusive, 69.23 per cent.; from 21 to 40 years inclusive, 15.38 per cent.; from 41 to 55 years inclusive, 15.38 per cent. Arranged according to sex, we find during the first decennium, 8 males and 9 females; during the second, 12 males and 7 females; during the third 2 males and 2 females; during the fourth, the same number of each; during the fifth, 2 males and 3 females; during the sixth, 1 female. The male sex, during puberty, therefore, seems to exhibit a more marked proclivity to epilepsy than the female; at later periods the ratio returns to the equality shown to prevail during the first ten years of life.

Causes.—Hereditary tendency could be traced only in 6 cases, or 11.1 per cent. A definite cause was assigned by the patient or the patient's friends in 16 cases, or nearly one-third of the whole. Amongst these, otorrhœa is mentioned twice; fright, twice; injury to the head, twice. The cases differ in the relation they bear to the occurrence of the seizure.

Premonitory symptoms.—The occurrence of an "aura" is a point on which observers have expressed different opinions. Comprising under this term all the premonitory symptoms indicating the approach of a fit, it is noted in 27 out of 52 cases; the most common was a sense of giddiness, and impairment of vision; sometimes the patient suffered pain in a definite region of the body, or, though unable to explain the sensation, was aware of some change, from which they knew that a paroxysm was about to take place. The sensation was never described as a puff of wind or aura in its verbal sense.

Individual symptoms.—Headache is a very frequent concomitant of epilepsy. It was observed in 33 out of 52 cases, or 63.42 per cent. The mode of its occurrence varies; the patient either suffers habitually or very frequently from it, and the symptom bears no immediate relation to the paroxysm; or the headache occurs shortly before the fits, so as to usher them in; or, again, it affects the individual after they are over. It was constant or frequent in 36.5 per cent.; it occurred before the fits only in 7.7 per cent.; it occurred after the fits only in 17.3 per cent. Biting the tongue is justly regarded as an important corroborative symptom; but it is by no means uniformly present, nor does it constantly occur in the different paroxysms affecting the same individual. The tongue was bitten in 17 cases, or 32.7 per cent. The urine was tested for albumen in 19 cases, and it was found temporarily present in 1, permanently in 1. It was also tested for sugar in 14 cases, and this ingredient was not found once—a result which seems irreconcilable with the observations of Dr. Goolden.

Results of treatment.—The author ventured to express a feeling of scepticism with regard to the positive certainty of any cure of epilepsy. He believed that, in the majority, no organic lesion, in the ordinary anatomical sense of the word, is present in the commencement of the disease, and that, in a large number, none seems to result from the recurrence of the fits. It appears that a diathesis is necessary to its occurrence, and that this may be suppressed or held in check; but whether it may be eradicated, is a question which he would not venture to answer in the affirmative. He was satisfied of the power of well-selected remedies in repressing, and often indefinitely postponing the paroxysm, and he particularly insisted on the importance of dietetic and regiminal treatment. The number of apparent cures was 15, or 28.85 per cent.;

in other instances, more or less benefit was obtained. The duration of the disease before treatment is commenced has an obvious influence over its curability. Eight of the 15 (apparent) cures were wrought in cases that had lasted one year or under, four were of two years' duration, one of three, one of six, and one of eight years. The treatment adopted had varied with the nature of the constitutional affection in each case; but he was able to draw this general inference, that the main indications which should guide us, are to remove local irritation by counter-irritants, to promote the healthy action of the secretory organs, and to give a tone to the constitution by vegetable and metallic roborants. The author expressed his belief that there was no specific for epilepsy; the salts of zinc certainly fail to remove it in many cases.

In a postscript he detailed the results of an analysis of the Returns of the Registrar-general with reference to sex in deaths from epilepsy during seven years; which gave 6729 males, and 6149 in females, or 52.26 of the one sex to 47.73 of the other.

ART. 35.—*On the use of Tartar Emetic in the treatment of Epilepsy.* By Dr. JOSEPH BELL, late Physician to the Glasgow Royal Infirmary.

(*Glasgow Med. Journal*, Oct., 1857.)

Dr. Bell is inclined to adopt the opinion that the proximate cause of epilepsy is congestion of some portion of the nervous centres, and that it is the vascular state that gives rise to the paroxysm, even in those cases in which the exciting cause may be structural alteration either of the nerve-substance, or of its coverings; and he recommends tartar emetic with a view to the prevention of this congestion. He considers that tartar emetic is proved to be a proper remedy in epilepsy by the following circumstances:—

"1. The great value of tartar emetic in the delirium of fevers, as recently introduced into practice by the late Dr. Graves, of Dublin. No doubt he combined the antimony with opium, and inferred that the combination was more beneficial than the simple preparation. A very little consideration will lead to a different conclusion. In the first place, he records many cases in which he exhibited quarter-grain doses of the tartar emetic every two hours without any preparation of opium, and the effects were uniformly successful. Secondly, the large quantity of the antimony, and the few drops of laudanum which his prescriptions contained, can leave no doubt but the efficacy of the treatment was due to the former. For example, in some of his cases he ordered two grains of tartar emetic and forty drops of laudanum to eight ounces either of water or camphor mixture; of this he exhibited a tablespoonful for the dose. In others he ordered four grains of the antimony, one drachm of laudanum, and eight ounces of water, the dose being also a tablespoonful; so that each dose contained from an eighth to one-fourth of a grain of tartrate of antimony, and only about four or five drops of laudanum. From these circumstances, I think we are justified in concluding, that whatever efficacy the mixture possesses, it must be ascribed to its antimonial constituent. I may be permitted to observe that, in the treatment of fever, I have, on the one hand, employed the antimony without the laudanum with great advantage, and on the other, have used the laudanum without any benefit.

"2. Tartar emetic has been most successfully employed in delirium tremens by Dr. Graves and others. It is consistent with my knowledge, that many medical men of this city place great reliance on its power in controlling this disease. In France we find Lepelletier most strongly recommending the drug as being capable of speedily curing the disease without the assistance of any other remedy.

"3. The power which it possesses in controlling acute inflammatory visceral congestions, is too well known to require any comment.

"4. The late Dr. Cheyne, of Dublin, has most satisfactorily established that antimonial preparations exercise a special influence in preventing cerebral congestions.

"5. From Aretæus to De Haen, and from the latter to the authors of the present day, we find it recorded that emetics and nauseating substances have

proved very efficacious in the treatment of epilepsy. Indeed it is only on this principle that we can explain the use of roasted toads and other disgusting remedies, that were recommended by medical writers of the fifteenth and sixteenth centuries.

"6. In the fourth volume of the 'Transactions of the Association of the Fellows and Licentiates of the King's and Queen's Colleges of Physicians of Dublin,' Mr. Creighton, surgeon to the Foundling Hospital of that city, published a paper on the treatment of epilepsy by the external use of tartrate of antimony as an ointment. He selected the worst cases in the institution, and has reported six instances in which the disease was either most essentially mitigated or entirely removed. On carefully reading these cases, it appears to me that the constitutional effects of the remedy were always experienced by the patients—a circumstance that occasionally happens from the employment of tartar emetic as a counter-irritant.

"7. Mr. Ackerley, of Liverpool, has published in the twenty-first volume of the 'London Medical Gazette,' a most excellent paper in which he establishes the great benefit resulting from the use of the drug in spasmodic diseases, such as hysteria and epilepsy.

"Lastly, writers on the treatment of insanity are unanimous in their eulogiums on the power which antimonials possess, in subduing the maniacal paroxysm."

Dr. Bell then reports some cases occurring in the Glasgow Infirmary, in which the antimonial treatment was tried.

CASE 1.—M. M—, æt. 31, admitted 11th of October, 1855; above ordinary stature, dark complexion, and full habit; states that ten years ago she had a severe attack of scarlet fever, since which time she has had epileptic fits. At first these attacks occurred about once every four months, generally during the night; but that lately they have been much more frequent, as often as every second day, taking place both during night and day. She is quite unconscious during the fit, lacerates tongue, and froths at mouth. After paroxysms she remains stupid and drowsy; complains of constant headache and loss of memory; appetite good; bowels constipated; catamenia regular, but scanty.

Treatment and Progress.—She had a dose of castor oil on admission. The day after, she had a fit of an epileptic character.

On the 13th, she was ordered a quarter-grain of tartar emetic every fourth hour. On the 19th, no fit since commencement of medicine; she complained of severe headache, her face flushed. She was ordered to have eight ounces of blood removed from nape of neck by cupping. On the 5th of November she left the Infirmary, having had no return of fits, and her headache gone.

The patient was again admitted on the 18th of September, 1856. She stated that she had remained well for nearly six months after she was dismissed, but afterwards her fits returned, and have become very frequent during the last month—sometimes three attacks during the day and night. General health good.

She was again ordered the same dose of the drug, and to have eight ounces of blood abstracted by cupping from nape of neck. She had a very slight fit during the night of the 26th. A blister was ordered to nape of neck. Had no return of fits till the 9th of October, when she had two attacks; but the convulsive movements were not severe, and of short duration. The cupping was repeated, and in addition to the solution of tartar emetic, she was ordered to have two grains of the white oxide of zinc, two grains of camphor, and two of the acetous extract of colchicum, three times a day. This was prescribed from a well-grounded suspicion that the patient was guilty of immoral practices; in order to restrain indulgence in which, a copious eruption of pustules were produced by the tartar-emetic ointment. On the 10th she complained of great sickness and prostration. The antimony was suspended, and she was ordered ten grains of the saccharine carbonate of iron three times a day. The cupping repeated to four ounces. On the 16th, the antimony was resumed, and the other medicines omitted. A seton was ordered to be inserted at nape of neck. On the 25th, the antimony was suspended, there being no return of fits. As she complained of severe headache on the 25th and 28th, she was ordered one

grain of tartar emetic, and a scruple of ipecacuanha for a dose. These operated freely, with relief to pain of head. On the 4th of November she was put on sulphate of zinc in grain doses, three times a day. On the 12th she had three fits, and on the 13th had a slight attack during the night.

CASE 2.—A. H., æt. 18, admitted 13th March, 1856; of ordinary stature, fair complexion, and full habit; she states that she has been subject to epileptic attacks for about eighteen months, occurring at intervals of about three weeks. She has no warning of their approach, gives a loud scream, and falls down convulsed, remaining perfectly unconscious; has foaming at the mouth, lacerates tongue, and feels drowsy for hours afterwards. Fits take place most frequently during the night, occasionally in the morning, and very rarely during the day. General health good. Catamenia regular, but scanty; ascribes the origin of illness to a fright.

Treatment and Progress.—On the 14th, she was ordered a teaspoonful every eight hours, of a solution of tartar emetic (two grains to the ounce).

On the 18th, the strength was increased to four grains to the ounce, and, in consequence of headache being severe, she was ordered to have eight ounces of blood abstracted from nape of neck by cupping. On the 19th she complained of sickness and vomiting; these symptoms continuing on the 20th, the mixture was suspended, and the cupping repeated. On the 21st an anæmic murmur was heard over base of heart. She was ordered ten grains of tartarized iron three times a day.

On the 28th this murmur had disappeared, and the patient felt quite well. She was ordered to resume the antimonial mixture (four grains to the ounce). Sickness returned, but at the end of two days it ceased. On the 2d of April the strength was increased to five grains to the ounce, and on the 10th it was increased to six grains. On the 11th, the medicine was suspended in consequence of sickness. She was ordered to apply six leeches to nape of neck, and to have at bedtime two grains of camphor, and three of the acetous extract of colchicum. At five o'clock in the morning of the 12th she had a fit which lasted seven minutes; she had got a fright during the night, by the sudden death of the patient who occupied the next bed. The antimony was resumed in doses of a quarter of a grain every four hours. No sickness was experienced. A blister was applied to nape of neck. On the 28th April, in consequence of return of headache, combined with loss of appetite and thirst, the antimony was suspended, and she was ordered half a grain of the valerianate of zinc three times a day. The headache continuing, on the 30th of April she was again cupped to six ounces, and the antimony resumed in doses of a sixth of a grain. On the 12th of May she had no return of fit, felt quite well, and refused to remain longer in the infirmary. She was, therefore, two months under treatment, and had only one slight attack. I may mention that this girl called on me during last June, and informed me that she had no return of the fit, but that lately her headaches had been very severe. I recommended her to resume the use of the tartar emetic in small doses, and to let me know the result. I have not heard of her since.

CASE 3.—A. G., æt. 14, admitted 28th of March, 1856; a stout, well-made girl of sanguine temperament; during the last month has been subject to convulsive fits of an epileptic character. The first attack followed the use of a lotion for conjunctivitis, the application having caused excessive pain. She has generally two fits daily, leaving her drowsy and exhausted; tongue slightly lacerated. General health not impaired; bowels constipated. Has not menstruated.

Treatment and Progress.—She was ordered the one-eighth of a grain of tartar emetic every six hours. This produced nausea, but no vomiting. Two days afterwards she had the sixth part of a grain three times a day. Four days after admission she had a slight fit. The antimony was increased to a fourth of a grain. Conjunctivitis having returned, she had three leeches applied to angle of right eye; these were repeated two days afterwards. She remained quite free from fits till she left the infirmary on the 19th of April. She was recommended to discontinue the antimonials, and to use for some weeks one

grain of sulphate of zinc, and two of quinine, three times a day. To return to the infirmary if any relapse should take place.

CASE 4.—E. T—, æt. 11, admitted 28th of May, 1856; a tall girl, for her age, of a florid complexion; about five years ago got a severe fall on her head; after this she became subject to epileptic fits. At the commencement they occurred during the night, but latterly they also have taken place during the day; sometimes she has four fits during the twenty-four hours; states that they are preceded by an indescribable sensation; she is quite unconscious, lacerates her tongue, is severely convulsed; thumbs clenched in palms of hand; remains for some time stupid and sleepy; bowels constipated; no catamenia.

Treatment and Progress.—The day after admission she was ordered three grains of the iodide of potassium three times a day. She had two fits. On the 30th of May she had also two fits, on the 31st one fit, and on June 1st two fits. On June 2d, she was cupped to four ounces from nape of neck: had two fits. On the 3d she had also two. She was now ordered one-eighth of a grain of the tartar emetic every four hours. This produced both nausea and vomiting; the cupping was repeated. On the 13th the antimony was interrupted, and she was ordered half a grain of valerianate of zinc, and one grain of extract of hyoscyamus, three times a day. She had no fit till the 28th; that is, three weeks after commencement of the tartar emetic, and ten days after its suspension. It was again resumed; she had no fit till the 2d of July, when she had a very slight attack. She remained in the Infirmary till the 27th without any return.

Dr. Bell says these cases were of the sthenic, and not of the asthenic type of epilepsy, but he says also, "I conceive that the remedy may possess as much power in controlling the epileptic paroxysms in the debilitated, as it has in the robust." He regards, moreover, the antimony "as a mere paroxysmal prophylactic—not as a cure;" and he admits that the patients were under treatment for too short a time to make their cases thoroughly satisfactory. This is the view which Dr. Bell has been led to take upon the subject of epilepsy, and this is the evidence upon which he takes his stand. And surely there are not many who would be prepared to take their stand with him, and look in the same direction.

ART. 36.—*A case of Catalepsy.* By Dr. G. BUCHANAN.

(*Glasgow Med. Journal*, July, 1857.)

This case presents no new facts in elucidation of pathology or treatment, but it affords a well-marked example of a very rare affection.

"On the 28th of May, 1856, I was suddenly called to visit Mr. X—. Proceeding immediately to the house, I found his mother, a widow lady, in great distress. She said, 'My son is very ill; look at him, there he is,' pointing to a bed-room door. Having had no information as to the nature of the case, I was struck with surprise at what met my view. Standing in the door-way of the room indicated was a young man about thirty years of age, stout and well-made. He had stripped himself of coat, waistcoat, neck-tie, and boots; and in that state he was planted with his feet slightly apart and holding the door-handle with one hand. Going up close to him, I asked what was the matter, but he paid no attention to what I said, nor answered a word. I now perceived that he was in a strange state. His eyes were wide open, staring straight forward, wholly devoid of expression, motionless, and with the pupils dilated. On taking hold of his arm, I found it was cold and hard as marble, and on asking him to move and trying to take his hand, I found the muscles firm as iron, and clenched tight as in cadaveric rigidity. I felt every part of his body, the muscles of his legs, abdomen, neck, and arms, all were equally fixed, tight, hard, and cold. His face was pale and cold, the lips livid, the jaws fixed; perspiration was visible in drops on his forehead. The pulse was 80, of fair strength, but was apparently soft; this, however, I presently found was fallacious, the apparent softness being caused by the tension of the tendons of the supinator longus and flexor carpi radialis muscles, which bore off the fingers from pressing on the artery. The breathing was subdued, but regular, and was occa-

sionally accompanied with slight stertor, being performed entirely through the nose.

"Being utterly astonished at such a strange appearance, I tried to disengage his hand, with the view of leading him to his bed, which was not far off. With the greatest exertion I succeeded in unclasping it from the door-handle, which I had no sooner done, than with the other he seized the door-post, and with the one now released, grasped my own. It closed on mine with the force of a vice, and the spasmodic clutch made me wince with pain, but by no effort could I release it. I remained writhing in the gripe of a marble statue, insensible alike to his own state and mine. At last, by the use of great force, I got clear, and stood aside a little to recover my breath. When I had arrived at the house, I learned that Mr. R. Connell, surgeon, had been sent for at the first, and had seen the patient; and while I was engaged in the personal struggle above detailed, Mr. Connell was sent for. On his arrival, we again examined the patient together, and leaving him standing in his statue condition, retired to consider the nature of the case. The prominent symptom was fixation of the muscles, and every medical man at that time having his attention turned to the trial of Palmer, it is not strange that the idea of strychnine poisoning should have suggested itself to both of us. We, therefore, a second time scrutinized all the symptoms, and as I was at that time engaged in assisting at some experiments on the effects of strychnine on inferior animals, we had little difficulty in coming to the conclusion that the idea first entertained was inadmissible. The attack was evidently of a cataleptic nature. Our first object was to get the patient into the recumbent posture, and for that purpose had a sofa prepared in another room, preferring it to a bed on account of the freer access of air. We now tried to lead the cataleptic into the other room, but he was planted so firmly that we could scarcely move him. Disengaging his hand from the door-post, we pulled him forward, when he fell over perfectly rigid like a pillar. We pulled him along in this state, but had to place him on his feet again for fear of hurting his toes, which were catching on the carpet. We then tried to carry him, but on getting him nearly level, the knees bent, and he slipped from our hands, again assuming the erect posture. After awhile the hands began to twitch a little, and on pulling him, we now got him forward a few steps, soon, however, becoming rigid again. By dint of pushing and pulling we got him conveyed to the sofa, on which we had little difficulty in laying him. Warmth was immediately applied to his feet and over the stomach, and cold to the head by means of wet towels. In a short time the hardness of the limbs wore off, his face became warm, he became relaxed in all his muscles, and could swallow a few spoonfuls of water. There seemed to be no indication for special treatment, and we left shortly after, with orders to continue application, and give a cup of tea when he appeared able to swallow it.

"Two hours after, in company with Mr. Connell, I again visited him. All symptoms of rigidity had passed off; he was lying perfectly easy on the sofa, breathing naturally, his face a little flushed, and perspiring. He spoke sensibly, and said he was pretty well, but felt tired and sore, evidently from the violence we were under the necessity of using to get him to move on our former visit. He assured us he had never had any fit of the kind before, and the only reason he could assign as cause for the present one was, that he had been very much fatigued that day in removing from another house, and had taken almost no food. When Mr. Connell saw him about an hour before my arrival, he found him standing in his bed-room in the half undressed state, with a strange wild look, and the appearance of being tipsy. We found, however, that he had taken no spirits that day, and was not in the habit of indulging. He could answer questions, but was very excitable and obstinate. He was induced to lie down, and had an opiate administered. He told us afterwards that, feeling uncomfortable in bed, he had arisen to undress, when the attack came on and fixed him in the position in which I found him.

"On visiting him next morning, he seemed quite well. He had slept, and taken breakfast with relish. He was advised to remain at home that day, and take some purgative medicine. The day after he was well, and at his usual avocations.

"On the 22d April, 1857, I was again summoned in haste to see Mr. X—. On entering the house, I found him in nearly exactly the same state as on the former occasion. Mr. Connell had again been called in in the emergency, and I found that gentleman supporting the patient, who was standing, stripped of coat and boots, and with one hand clutching at the gas bracket, and by the weight of his body had partially twisted it from its place. The symptoms were precisely those of the former attack, and a description of one will serve for both. What riveted our attention most on both occasions was the fixed and unchanging attitude, the perfect hardness of the muscles, the pallor of the countenance, the glaring and wild expression of the eyes, and the icy coldness of the skin. Altogether, it would be difficult to conceive a more appalling spectacle. Having seen him during the previous attack, Mr. Connell and I at once knew how to proceed, and using force more promptly than before, we soon had him prostrate on the sofa, although not without considerable exertion. We had most difficulty in getting him into the horizontal posture, for by the time we had dragged him to the sofa, the rigidity had partly gone off, and he was partially conscious. He, however, struggled violently against us, not in the way of attack, but of resisting all our efforts to make him lie down. Mr. Connell, therefore, grappled with him, while I seized his feet, and by a rapid jerk both were precipitated. A little exertion freed Mr. Connell from his grasp, and he then lay quiet and stiff. The same means as used on the former occasion—warmth to the feet and stomach, and cold to the head—were soon followed by entire relaxation, and when we returned in two hours we found him sensible and able to swallow a cup of tea, but strangely excitable and ill at ease. Next morning all evidence of the seizure had passed off.

"In the present instance, searching for some cause of the fit, I learned that the patient is subject to slight bilious attacks, that at this time his digestive organs were somewhat out of order, and that, meeting an old friend, he had accompanied him to the theatre, where he remained till a late hour; that during the day he had been in a restless state, and being unable to take a proper quantity of food, was much worn out in the evening, just before he was seized. The circumstances were not very dissimilar from those in which he was attacked on the previous occasion, the exciting cause in both being excitement, fatigue, and want of food. On questioning him as to his feelings during the attack, he said that he saw us, and although he did not remember all that passed, he knew quite well that we wished him to lie down, but that he had no control over his limbs, and had no power to assist, and was unconscious of resisting our efforts. As to his state during the day, he felt tired and excitable, and being quite worn out when he came home, he had resolved to go to bed for a rest, and was in the act of undressing, when he suddenly lost the power of his limbs, and would have fallen, he thinks, if he had not caught hold of the gas pipe, and in that position he stiffened, and was unable to move from it.

"I have had opportunities of seeing this gentleman in his ordinary state of health during the interval of the attacks, and since the last one. He is of a nervous and excitable temperament, and has quite the appearance that one would expect in the subject of some nervous affection.

"Mr. Connell informs me that he has been called to see him on two other occasions, viz: the 3d July, 1856, and the 10th May, 1857. On both of these dates he found him in a very restless and troublesome state, very stubborn, and partially insensible, but with no spasmodic or cataleptic seizure. They both occurred after a day of unusual fatigue. This state passed off without any treatment except rest, quiet, and an opiate."

ART. 37.—Facial Paralysis followed by Pleuropneumonia. By Dr. GOODWIN, Physician to the Norfolk and Norwich Hospital.

(*Medical Times and Gazette*, Oct. 17, 1857.)

This case appears to be another illustration of that connection between chronic disease of the ear and pneumonia or pleurisy, to which attention was directed some time ago by Dr. Gull and others (*v. Abstract*, XXI. p. 258). It is also interesting as an instance of recovery from very severe disease.

CASE.—“ Francis Bunn, æt. 29, a light porter, was admitted under my care into the Norfolk and Norwich Hospital on the 1st of November, 1856. His condition on my first seeing him was most deplorable—pale, emaciated, and perfectly unable to walk; he was carried into the ward. It appeared from those who came with him, that in the previous May he had been exposed to cold and wet, and had an attack of inflammation of the internal ear on the right side, which terminated in an abscess bursting into the throat—deafness and perfect paralysis of the muscles of the right side of the face ensuing. On admission there was perfect deafness in, and a fetid purulent discharge from the right ear; the integument over the mastoid portion being tender and easily indented by the fingers.

“ He complained of a good deal of pain just at the articulation of the jaw, and over the right eye, and the whole right portion of the scalp. This pain was of a most agonizing character, and he would scream most terribly at times. There was some loss of sensation on the right side, and all the muscles of the face were paralyzed—there was also hanging of the cheek, and a good deal of difficulty in moving the jaw in a lateral direction.

“ The treatment pursued was to support his strength by stimulants and beef-tea enemata, and quinine in very large doses, that is eight grains every four hours at first; this acted like a charm upon his severe pain. The ear was syringed, and slight counter-irritation was employed. Under this plan he recovered his strength pretty fairly, and his power of swallowing and mastication; and on January 20, 1857, he was made an out-patient, with the facial paralysis much the same; the deafness was improved, and the discharge from the ear still abundant and dependent upon disease of the temporal bone; the membrana tympani was destroyed.

“ On February 14th I again saw him, having been absent from home for a short time, and I found him complaining of pain in the left side on taking a deep breath, and general ill-health.

“ I made him become an in-patient, and found on examination that he was suffering from pleuropneumonia of the left lung. He was treated cautiously with antiphlogistic remedies and blisters—but his condition seemed not to indicate either antimony or mercury. He gradually got better, and then continued for a long time in the same condition, but not getting either much better or much worse; he had very little appetite, and any meat served to cause nausea—his urine was very dark colored and loaded with lithates, and his pulse continued most provokingly high. I examined his chest from time to time, and there was slight impairment of percussion sound at the lower part of the lung, both anteriorly and posteriorly, and some rather large crepitation at different parts.

“ On the 26th February he was seized with severe dyspnoea, and he struggled for his breath like a man with spasmodic asthma, becoming black in the face. When I saw him he was very much exhausted, but the dyspnoea had gone off in a measure. There was general dulness over the whole of left lung, and very little respiratory murmur could be heard, and no vocal fremitus; expectoration was scanty, and frothy white colored. He had some senega and ammonia and ether, and a large blister at the back of his chest.

“ Another severe attack of dyspnoea followed very soon, and he was ordered some *Mist. moschi*, which relieved him immediately, and he had some to take whenever he felt the attacks coming on. He now began to expectorate much more freely, and the sputa was clearly purulent and very offensive. He continued in this condition until the 4th of March, taking plenty of brandy, eggs, and wine, and his muck about twice daily. On March 5th, I find by my notes that he was better, but complained of a heavy feeling, and occasional sharp pain under the left nipple. I found a portion of integument, about as large as the hand, immediately below the left nipple, which had a faint blush, and the temperature greater than the other parts of the chest. Percussion gave a dull sound over it, and but little respiration could be heard; but he does not take deep inspirations at all, and most of the work is done by the right lung. There is some tubular breathing just over the nipple, and posteriorly respiration has become bronchial at the upper and middle part; at the base small crepitation.

"A poultice was applied, which gave ease, and the next day there was evident bulging of the ribs, and the intercostal spaces anteriorly were quite obliterated below the nipple. The blush has become more manifest and less extensive, and at one point matter seems very close to the surface, and the integument rises and falls synchronously with the heart's beat. He continues to expectorate a very large quantity of horribly fetid pus, gangrenous in fact. I considered that I had to deal with either a circumscribed abscess of lung, or an encysted empyema; but I thought the former more probable, and that gangrene was taking place. I determined to allow the collection to open where it was endeavoring to do so, just between the fourth and fifth ribs, and this occurred on March 8th, and about three pints of very fetid, dirty-colored pus were discharged, the opening being as big as a pea, and at every inspiration air was drawn and returned with a whizzing noise in expiration, and the fetor of the breath rendered the ward almost unbearable. He continued for a long time in a most critical condition, and was reduced to very extreme debility, though he had brandy, wine, eggs, &c., *ad libitum*, and bark and ammonia. He ceased to expectorate as soon as the matter burst out, and there was another large discharge, about one and a half pint from another aperture, close to the first, four days afterwards. From this time, until his discharge, on June 20th, he slowly improved. The physical signs were of a large cavity in the central portion of the lung. The wound in the side discharged most copiously for many weeks, and most fetid was the pus; whenever he coughed he could empty the cavity of its contents. There was a portion of necrosed rib to be seen, and a portion of integument about an inch square sloughed away. During the last three weeks of his stay in the hospital, several small scales of dead bone came away, and on his being made an out-patient the wound had completely granulated. I found the physical signs the other day (June 27), as follows: Percussion sound, impaired over the lower anterior portion of lung, not resonant under the clavicle. Respiration quite clear anteriorly over whole lung, except just round the wound, where there is some small crepitation. Posteriorly, percussion sound impaired, and though a good deal of air enters the lung, it does so imperfectly; but no evidence of any cavity appears now. The wound is perfectly healed, and the patient walked up to my house to-day."

ART. 38.—*Alarming Head Symptoms relieved by Quinine.* By Mr. R. L. BOWLES, of Folkstone.

(*British Med. Journal*, Aug. 22, 1857.)

CASE.—H. W. B——, a medical man, stout, strong, and healthy, æt. 28, and married, was attacked on the evening of July 6th, on his way home from the cricket-field, with most severe headache. He had walked, in the course of the day, about sixteen miles, besides having played for two hours at cricket. The day was hot and sultry. On arriving at home, he went to bed, but the severity of the pain in his head prevented his sleeping. He had also great intolerance of light. During the next two days he continued much in the same state, with the addition of occasional delirium. It was at this time that I was called in, and found my patient complaining of severe splitting pain in the forehead, which was much increased by talking or moving. He earnestly requested me to leech or bleed him, having a conviction that he was suffering from congestion of the brain. The pulse was from 46 to 48 in a minute, soft, and occasionally intermitting; the skin cool and moist; the tongue oedematous and pale, with a soft white fur on its surface; the face, which was occasionally flushed (though without a corresponding heat of skin), wore a singularly indifferent and solemn expression; the ocular conjunctiva was healthy in appearance. He had become restless and irritable, and was constantly throwing himself about in bed. His bowels had been acted upon by a seidlitz draught. A mixture of ammonia, sulphuric ether, and camphor julep, was now prescribed to be taken every four hours, and a full dose of liquor opii at bedtime.

July 9th, 8 A. M. The patient had passed a comfortable night, and appeared much relieved, his countenance wearing a more natural expression. In the

afternoon, however, the symptoms returned in all their severity. The opiate was omitted at bedtime. A blister was applied to the neck.

July 10th. In the morning I found that he had been delirious, and had passed a restless night; the pain and intolerance of light were quite as distressing; and he was unwilling to take nourishment of any kind. The bowels were confined, and the tongue had now a brownish coat on the back part. The blister had risen well. A physician, a friend of my patient, called to see him; and, believing the case to be of the nature of sun-stroke, advised eight leeches to the temples, which were accordingly applied, but with no relief to the symptoms. He was now a good deal depressed.

July 11th. He passed a restless night. The bowels were freely relieved by a pill of calomel and colocynth, but each action of the bowels appeared rather to aggravate the headache. The opiate was given at bedtime, and a mixture of sulphuric ether, valerian and camphor; with beef-tea *ad libitum*. This treatment afforded considerable relief, and gave him a comfortable night.

July 13th. Severe symptoms again returned, which were partially relieved by repeated doses of the stimulating mixture. Mr. Roscow (who now saw the case with me) advised disulphate of quinine, in three-grain doses, to be taken at intervals of two or three hours; care being taken to give the first dose of quinine when the headache was at its minimum. The effect was magical. The first dose prevented the paroxysmal return of headache, and, with its continuance, a rapid general improvement took place.

July 16th. My patient was convalescent, the pulse having risen to its normal standard.

Twelve months ago my patient was living in the island of Grenada, and for nearly two years he suffered severely from repeated attacks of intermittent fever, for which he had taken large doses of quinine with great advantage.

ART. 39.—*On the Use of Chloroform in certain Forms of Paralysis.*

By M. LANDRY.

(*Mon. des Hôp.*, 55, 1857; and *Med. Times and Gazette*, Oct. 10, 1857.)

M. Landry terminates a long series of papers with the following conclusions: 1. There exists a group of paralyzes of the motor powers, offering the following general characters. There is preservation of muscular irritability and of the excitability of the nervous trunks, integrity of muscular nutrition, and absence of reflex motion, of spontaneous convulsive movements, of contractions, of fibrillary contractions, and of trembling in parts actually deprived of voluntary motion. 2. In this group may especially be ranged hysterical paralysis and sympathetic paralysis, generally confounded together under the common denomination hysterical. 3. Some of these paralyzes disappear during sleep, and immediately yield to the action of chloroform (probably also of ether) and narcotics. Others undergo no modification under such influences. 4. The former appear to belong to the category of sympathetic paralyzes; the latter to that of hysterical paralysis, properly so called. 5. These phenomena constitute a means of diagnosis of true hysterical paralysis. 6. They serve to distinguish in all cases the paralyzes in which they are observed from those which are dependent upon organic, nervous, or muscular lesion. 7. Narcotic and anæsthetic agents may be employed in the treatment of paralysis, whether as curative agents, palliatives, or simple auxiliaries.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 40.—*On Redness of the Cheeks as a Sign of Pulmonary Inflammation.*

By M. GUBLER.

(*Bull. de la Soc. Méd. des Hôp.*, No. 6; and *Gaz. Hebdom. de Méd. et Chir.*, Aug. 7, 1857.)

The investigations of M. Gubler tend to revive an ancient opinion, viz., that redness of the cheeks is a sign of inflammation in the lungs. This was the opinion which was universally accepted before the days of the stethoscope, when

to have redness of the cheeks and pain in the side was to have inflammation in the lungs. M. Gubler reports nine cases, in all of which the cheeks exhibited a manifestly increased redness and heat in the side corresponding to the pulmonary inflammation, or in both sides, if both lungs were affected. Whatever the kind of inflammation, whether of the bronchial tubes or of the substance of the lungs, whether primary or that accompanying tuberculous degeneration, the cheeks were always found to present this increased redness and heat; and not only so, but the increased redness and heat was found to vary with the changes of the inflammatory condition, diminishing or augmenting as this condition diminished or augmented, and being, as a rule, invariably proportionate to the intensity of the inflammation. These investigations appear to have been made in all cases with very great care. M. Gubler explains the phenomena, to which he directs attention, by supposing that the branches of the sympathetic nerves distributed to the face are made to partake, by a kind of reflex action, in the irritation caused by the pulmonary inflammation in the nerves belonging to the same system which are distributed to the lungs.

ART. 41.—*On Curable Gangrene of the Lung.* By Dr. CH. LESEGNE.

(*Archiv Gén. de Méd.*, July, 1857.)

"I am tempted to believe," says M. Laennec, in his 'Treatise on Auscultation,' "after an experience in many cases which have recovered, that the odor and character of the expectoration proceeding from a gangrenous excavation of the lung, does not always indicate the existence of such excavation, and I incline to think that the same kind of expectoration may sometimes depend upon a general disposition to gangrene, which is manifested solely in the mucous secretion of the bronchi." And certainly it is not always possible to refer this character of the expectoration to small gangrenous eschars in the substance of the lung, for in two or three instances, Laennec says further, "I was altogether unable to find anything after death which would account for the gangrenous odor beyond a certain proneness to putrefaction, particularly in the mucous lining of the bronchial tubes."

It is to this pathological condition that Dr. Lasègne directs our attention, first by an imaginary sketch of his own, and afterwards by a case related by Dr. Molley, and reported in the "*Lancet*" of May, 1854.

The sketch is this. An individual of variable age, of a constitution more or less robust, tried generally by previous fatigue or illness, is seized with bronchitis. At first this bronchitis has no peculiar symptoms, the oppression is moderate, the cough moderate, the expectoration sufficiently copious, and such as is met with in an advanced period of catarrhal affection; but notwithstanding this want of severity in the symptoms the general health declines, the expectoration becomes purulent and more copious, and some of it has a fetor which attracts the attention of all who come near the patient.

Presently the fetor of the expectoration becomes more tolerable or passes off altogether, but the bronchitic symptoms continue.

Then, after an interval of variable duration, the bronchitic symptoms become exacerbated, the expectoration becomes of a yellowish-green, sometimes brown, sometimes gray; the quantity becomes increased, often to an excessive amount; and it again acquires the fetid and gangrenous odor. This expectoration, perhaps, is not uniformly present, but it happens in fits at different periods of the day or night. The breath is more or less offensive. The strength fails; the appetite fails; fever is slight or altogether absent; digestion is but little troubled; coarse or subcrepitant moist râles are heard over different parts of the chest or over its entire extent; the voice may or may not have a bronchial resonance, but there is no increased dullness on percussion; the cough has no characteristic peculiarity. Sometimes the bouts of copious expectoration are preceded by transient feelings of rigor. This state of things may continue for months, almost for years, to the great impairment of the general health, but this impairment does not reach the degree which is witnessed in the hectic state of advanced phthisis. Hæmoptysis may or may not be present.

If the course of the malady is prolonged, there may be several intermissions

in which the expectoration diminishes and loses its fetid character, and in which, also, the stethoscopic signs may become greatly altered for the better.

The example which M. Lasègne records is a case of Dr. Molley, taken, as we have said, from the "*Lancet*" for May, 1854.

CASE.—D. C.—, æt. 49, a bookbinder.

August 27th, 1851.—For some days past complains of malaise, with a peculiar sense of feebleness in the left side. The face is pale and yellowish; no cough. Up to two years ago very intemperate; but very abstemious since this time.

31st.—No improvement. An obscure pleural rubbing sound over the anterior surface of the middle third of the left lung; inspiration jerky; no pain on taking a deep breath.

September 4th.—No manifest improvement. Respiration not much interfered with, however, and the patient is able to walk a considerable distance without notable fatigue.

6th.—Sensation of feebleness rather than of pain in the chest; slight cough; some expectoration, characters not mentioned.

8th.—The only new symptom is that the expectoration has acquired a blackish color, and is semipurulent and very fetid. Pulse 102, not depressed.

10th.—Expectoration increased six-fold, purulent, and having the characteristic gangrenous odor. While talking to the patient, a sudden gust of disagreeable vapor escaped from his lungs, and filled the room, and at the same time he began to cough and spit, saying that his attack was coming on, that it would last for fifteen minutes, that several such attacks came on in the day, and also, that during them he had a filthy fishy taste in his mouth.

12th.—Expectoration more copious; cough more troublesome. Still no thoracic pain. Gurgling sound heard at some distance during speaking. Pulse 102. Sleep sufficiently good. Appetite not defective. Slight "*bruit de craquement*" over the chest, both anteriorly and posteriorly.

15th.—Expectoration somewhat diminished, and changed in its characters. It is still as fetid as ever, but now in a blackish fluid are seen to float certain globular bodies, puriform, white, yellow, grayish, intimately mixed with blood, and easily removable.

19th.—Diminution of cough and expectoration, and the odor much more tolerable.

20th.—Relapse. Cough and expectoration increased. Pain over the left side and extending to the right. The symptoms, indeed, are those of acute bronchitis, modified by the influenza now prevalent. Pulse 100, full. Fine râles, especially on expiration.

21st.—Marked improvement. Expectorated ordinary bronchial mucus and a little pulaceous matter.

Up to the 14th of October the patient went on improving, and the bronchitic symptoms had subsided by degrees. On examination towards the end of this period, the air was found to enter more freely into the part of the left lung in which the respiration has been described as defective, but there was also a cavernous sound indicating a small cavity between the inferior angle of the scapula and the angle of the corresponding rib.

October 15th.—The bronchitic symptoms have relapsed, with copious and fetid expectoration, and pain.

19th.—These symptoms have subsided, and the expectoration has acquired the character belonging to ordinary bronchitis.

November 21st.—Considerable hæmoptysis.

December 2d.—Removed to another neighborhood, and from this time the patient improved rapidly.

Dr. Lasègne also refers to certain cases reported by Professor Skoda, of pulmonary gangrene cured by inhalations of turpentine, as in all probability belonging to the category of the cases under consideration; and he also cites, as a probable case of the same kind, a case recently reported by Professor Laycock, of Edinburgh, which case forms the subject of our following article.

In conclusion, then, there appears to be a gangrenous affection of the lungs (an affection to which attention was called some years ago by M. Brequet), which

is confined either to the lining membrane of the bronchi, or to the secretions contained within the bronchi, which agrees in some respects with ordinary gangrene of the lungs, but which differs in its chronic course and curability, and in the copiousness of the expectoration, and of which the stethoscopic signs are never other than very unsatisfactory.

ART. 42.—On Fetid Bronchitis. By Professor LAYCOCK, of Edinburgh.

(*Medical Times and Gazette*, May 16, 1857.)

The remarks of Dr. Laycock upon this affection, which were delivered in a clinical lecture, acquire additional interest when read in connection with the remarks of Dr. Lasègne upon curable gangrene of the lungs (*v.* preceding article). "In one point only," says Professor Laycock, "is there a resemblance to pulmonary gangrene, namely, in the stench of the breath and of the sputa. In the fetid bronchitis, however, the odor is not that of putrid flesh, but of butyric acid and the new odorous compounds, the butyrates of ethyl, now used to flavor confectionery. In the case of Scott the odor was that of May-flower, or apple-blossom, with a conjoint odor—a sort of *arrière gout* of feces." Dr. Laycock relates three cases, one of which we give; another with aortic insufficiency and dilatation, pulmonary condensation and softening, and atrophy and softening of the left lobe of the cerebellum; and a third, reported in the "*Medical Gazette*" for December, 1837, with bronchorrhœa and convulsive cough, occurring in tertian paroxysms. Dr. Laycock considers that functional disturbance of the nerve-centres in relation with the lungs is concerned in producing the butyric or fetid expectoration.

The interest of the case subjoined is enhanced by the fact that the odor of the sputa was found to be due to the presence of urethylamine, with butyric and acetic acids.

CASE.—Oliver S—, æt. 37, single, by trade a tailor, residing in the Canon-gate, admitted February 17th, 1857.

Patient is five feet six inches in height, well formed and tolerably robust. Has the appearance of having been very stout, but the muscular system is now flabby. Diathesis, lymphatic; hair dark; features broad and massive; forehead prominent; conjunctivæ anæmic; eyes gray; nose short and thick, *alæ nasi* expanded; malar bones not prominent; upper lip tumid: mucous membrane of lips and gums pale; teeth small and regular, enamel good. Voice hoarse and whispering; breath gives off a peculiarly fetid odor. Sternal end of left clavicle is higher than the right; manubrium sterni depressed. On left side there is a prominence of the third and fourth ribs at their junction with the cartilages. Abdomen rather large and flabby.

History.—Is one of a large family, seven of whom, viz., four brothers and three sisters, are dead. Does not know of what diseases they died. Patient states that in his youth he was very healthy and temperate. Until the age of twenty-five years he followed the occupations of a tailor and a hawker, which he relinquished at this time for that of a beer-shop keeper. For five years subsequently he continued well, and though indulging occasionally in liquor, was not, he considers, on the whole, intemperate. Being unfortunate in this line of business, he was compelled to sell his house and resume his prior occupation of hawking. Owing to the depression resulting from his misfortunes, he became very intemperate, and five years ago he had a severe attack of delirium tremens, for the treatment of which he became an inmate of the infirmary. After remaining there a month, he was discharged, and he returned at once to his habits of dissipation. Twice subsequently, while in a state of intoxication, he received injuries on the chest, which caused the alterations in its form above noticed. In other respects he continued well until a year ago, when he had a second attack of delirium tremens, and was again an inmate of the infirmary for eight days.

The present illness commenced three months ago, after exposure to severe cold and wet. The first symptom noticed was a troublesome cough, which, however, was unattended by pain or expectoration. This continued until two months ago, when, after repeated exposures to cold and wet, it became more

urgent, though still without pain, and with only slight expectoration. Between three weeks and a month ago, the cough increased in violence; there was severe pain in the left side, and the sputa was streaked with blood. He noticed now, for the first time, that his breath was very offensive. Since that time the cough has continued unabated; the pain in his side is much increased, and the sputa have been occasionally tinged with blood.

He has not been under medical treatment. He had no feverishness or thirst from the commencement of the present attack, until four days ago. States that he has lived well during the past seven years. Feels tolerably well, except as to the cough.

Examination on admission.

Respiratory system.—Thoracic expansion is somewhat restricted. The sternal end of the left clavicle is dislocated; manubrium sterni depressed, and the prominence of third and fourth ribs appears to have resulted from an old fracture.

On percussion, anteriorly, the right side of the chest is resonant, as also the upper two thirds of the left side; the lower third is dull both anteriorly and laterally. On auscultation over right side, inspiration is found to be harsh, expiration prolonged. On the left side, inspiration is sibilant, expiration prolonged and attended by fine moist crepitation superiorly, but over lower third, by loud snoring. Posteriorly, percussion is normal. The respiratory sounds are slightly exaggerated on both sides, and at the base of left lung there is fine crepitus with expiration. The cough is very troublesome; sputa copious (about a pint in twenty-four hours), muco-purulent, viscid and fetid, but much less so than the breath; some of the masses are tinged with blood. No lung-substance is observable under the microscope; but there are abundant pus-globules.

Digestive system.—Tongue furred and moist. Patient complains of great thirst. There is no hepatic or splenic enlargement discoverable on percussion. Bowels open.

Genito-urinary system.—Urine, sp. gr. 1.032; deposits a copious sediment of urate of ammonia and purpurates. Chlorides abundant.

Circulatory system.—Cardiac dullness two and a half inches transversely at nipple; impulse felt between the fifth and sixth ribs. There is a slight blowing murmur at the close of systolic, heard at the apex. Pulse 68, full and firm.

All the other systems normal.

February 17th.—Pulse 80, full; skin hot and dry. On right side of the chest the respiratory murmurs are harsh, and with forced expiration, snoring. On the left side the respiratory sounds have the same character, but to a greater degree. Posteriorly, forced respiration is harsh on right side; and on left there is snoring with both respiratory acts. Tongue furred; thirst excessive.

18th.—To take the following mixture:—

R. Naphthæ Medicinalis, ʒij;
Liquoris Morphiae Murialis, ʒiij;
Aquæ Destillatæ ad ʒvj.

M. Ft. mistura cujus sumat, ʒss, ter quotidie.

Vespere.—On the right side the sounds are unchanged; but on the left there is sibilus anteriorly, with inspiration and expiration, and fine crepitus at the close of the latter. Patient continues very thirsty. Pulse 80, full. Patient expectorates about a pint in twenty-four hours. Makes no complaint.

19th.—No sibilus on left side.

20th.—Considerable pain over lower third of left side. To have a blister applied to the seat of pain.

21st.—Pain much diminished. Patient is still very thirsty. Sputa increased in quantity.

22d.—The pain has quite gone. On percussion the dull sound is more marked over lower third of the left side. Over the same region posteriorly, the crepitant râle is still heard.

23d.—The crepitus previously heard over left side anteriorly is no longer present. There is no sibilus on either side, and over the whole front the re-

spiration is not snoring, although it is harsh. Pulse 60, soft and rather feeble. Sputa much increased (two pints in twenty-four hours). Exhales an odour resembling that of May-flowers. Breath still very fetid; the odor is rather feculent than gangrenous.

25th.—Had a return of hæmoptysis to-day at 2 P. M. The sputa were deeply covered with blood. Patient had no pain, and at 7 P. M. the hemorrhage ceased. Expresses himself as feeling well in other respects. The snoring and crepitus have returned on the left side. Posteriorly, over lower half of left side, there is coarse crepitus with both respiratory acts. Pulse 60, very feeble. Appetite good; thirst diminished. Add five minims of Tinct. Ferri Sesquichlor., to each dose of the mixture.

March 2d.—On auscultation a fine moist crepitation is heard with inspiration over the whole back. There is no dullness on percussion, although the tone is rather flatter than natural. Vocal resonance everywhere increased.

5th.—For the last three days patient has been sitting up for about three hours daily. Sputa as copious as before. Still no complaints. Ordered to omit the other remedies and take one-thirtieth of a grain of strychnia every eight hours.

9th.—No crepitus on right side. The breath is not nearly so offensive. Patient feels considerably stronger, and sits up for five or six hours daily. Increase dose of strychnia to one-twentieth of a grain.

March 10th.—The sputa this morning were slightly tinged with blood. The cough was very urgent, but patient had no pain. Continued same treatment.

19th.—Strength increasing. Sputa diminished in quantity, and since last report have been occasionally tinged with blood. The fragrant odor has entirely disappeared, and the breath has almost lost its fetor.

24th.—The dullness over the lower third of left chest is still present; there are yet crepitations remaining over the corresponding region posteriorly. The expectoration has very much decreased; the sputa amounting to only half a pint in the day, contain but very few traces of blood.

27th.—The cough is now very slight; sputa measure only two ounces per diem. Patient is gaining flesh rapidly.

April 2d.—The improvement continues; sputa only one ounce in last twenty-four hours, viscid and free from blood.

Dismissed. The expectoration had wholly ceased.

The fetid sputa were examined in the chemical laboratory of the University, by the kindness and under the superintendence of Professor Gregory, and the odor was found to be due to the presence of methylamine with butyric and acetic acids.

ART. 43.—On acute Atrophy of the Lungs. By Prof. ВЕНТ, of Munich.

(*Virchow's Archiv*, xi. p. 275; and *Dublin Quart. Journ. of Med.*, Aug., 1857.)

"I very recently had occasion to examine the bodies of three individuals dead of typhus fever, the condition of the lungs in whom appears to me to be of special interest. It, in fact, confirms in a certain respect, and enlarges the opinion I previously expressed,* which was based on only a few observations, that a morbid process analogous to acute Bright's degeneration of the kidneys occurs in the lungs; that this, as an inflammatory process, must be distinguished from croupy and tubercular pneumonia; and that this desquamative pneumonia, as I proposed to call it, during acute exanthematous disease, typhus, &c., occurs in the period of specific morbidification. In this paper I pointed out that solution and fatty metamorphosis, with more or less condensation and coloring of the pulmonary tissue, might be regarded as perfect or imperfect reparative processes of the acute inflammatory condition of the lung.

"The three dissections above alluded to afforded examples of a third and unfavorable termination.

"In all three cases death occurred between the fourth and the sixth week

* Report on 380 dissections. Heale and Pfeuffer's "*Journal für rat. Med. Neue Folge*," Bd. viii. Heft 1, p. 50, &c.

from the commencement of the disease, and therefore in the period of secondary processes after the disappearance of the proper typhus; dissection in each case revealed considerable hypertrophy of the brain, and in addition, in two instances, swelling of the spleen and of the mesenteric glands in a state of retrogression, the ileum with flat edged, more or less united, ulcers extending to the muscular coat; once, on the contrary, there was a relapsing, pale, medullary swelling of the edges of the ulcers already existing in the clusters of Peyer's glands, with fresh exfoliation of the same, fresh tumefaction of the spleen and mesenteric gland; in this case there was also a laryngeal ulcer denuding the arytenoid cartilage.

"The pulmonary pleura was never directly adherent to the costal; on the other hand, I twice found a circumscribed adhesion by means of fibrinous exudation; the parts of the pulmonary tissue subjacent to the latter exhibited at one time pulpy foci, of gangrenous odor, from the size of a pea to that of a hazel-nut, once in the inferior lobe of the right lung, once in the upper lobe of the right, and in the lower lobe of the left lung; at another time the greater part of one lobe was gangrenous, as was in one example the superior lobe of the left lung; in the latter case several of the corresponding branches of the pulmonary artery presented secondary thrombi, not caused by embolition. Besides these destroyed portions, the tissue of the affected lobe of the lung presented complete absence of air, an unusual flaccidity, with considerable infiltration, a smooth surface of section, a generally brownish-red discoloration mixed with something of gray, which latter was in some lobular portions predominant; a lobular more or less dense consistence, and, what was in each case most striking and significant, a considerable cylindrical dilatation and reciprocal approximation of the finer bronchi unprovided with cartilages, with a dark livid redness of the mucous membrane.

"Lobular condensations void of air, from the size of a pea to that of a cherry, were found in greater or less number also in the other lobes of the lungs, in the midst of aerated and merely oedematous tissue.

"In the two cases of pleural fibrinous exudation, there lay in most of the finer, but, as has been remarked, dilated bronchi belonging to the gangrenous foci of the pulmonary parenchyma, croupy plugs, which once were continued into the larger branches as loose investing croupy membranes. The gangrenous foci lay chiefly along the plugged bronchi, and in parts embraced the entire tube.

"Microscopic examination showed, when the tissue of the lungs was investigated step by step from the lobular, unaerated, condensed parts into the pulpy masses, that the chief alteration lay in the epithelium, as in it the simple dark filling with fine granules could be traced up to complete molecular destruction, whereby lastly the fine granules were either still accumulated in the form and arrangement of the earlier cells, and the little clusters continued grouped together, or with total obliteration of the contours of the cells only undefined molecular masses were to be seen. Fungi or infusoria were not observed in these masses. Of fibrinous plugs, pus in the pulmonary tissue, as well as of cellular formations, like those seen in the gelatinous infiltration around the yellow dry lobules in tuberculous pneumonia, no trace could be discovered. It is therefore evident that we had to do neither with tubercular nor with croupy pneumonia.

"In estimating the foregoing observations, two points appear to be pre-eminently of essential and characteristic importance: 1. The cylindrical dilatation and reciprocal approximation of the finer bronchi in the flaggy, unaerated, infiltrated pulmonary parenchyma; 2. The more or less complete molecular destruction of the epithelial investment of the air-vesicles.

"Both points present the most incontestable analogy to Rokitsky's fully formed acute atrophy of the liver. If in typhus, as I endeavored to show in the report above quoted, only the early stages of acute atrophy are usually found, the same is likewise the case with the lungs; while the slighter degrees of the pulmonary affection just described, that is, of desquamative pneumonia, are not so rare in typhus, its highest degree, the acute atrophy of the lungs, as I think I must call the affection in question, is of extreme rarity.

"There can be no doubt that we have really to deal with atrophy of the pulmonary parenchyma; the destruction of the pulmonary epithelium is unmistakable; the areolar tissue is filled with it and its molecular remains, as well as with some albuminous fluid; through expulsion of the air it is collapsed, atelektatic, and even if in no case an old pleural adhesion was present, still the force of the physiological adhesion of the costal and pulmonary pleura is so great, that under the above described decrease of volume of the pulmonary parenchyma and its simultaneous inaccessibility to air, it is able to overpower the walls of the bronchial ramifications, and to dilate their caliber. The cylindrical dilatation of the bronchi is explicable in no other mode.

"The only possible difference between acute atrophy of the lung and acute atrophy of the liver consists in this, that in the former, in consequence of the action of the atmospheric air, the destroyed masses, with their fibrous superstructure, will be subject to complete softening and putrefactive decomposition, and therefore the pulpy, gangrenous foci will be chiefly situated around and along the bronchi, and the croupy affection of the bronchial mucous membrane and the pleuritis are to be regarded as further consequences of the same.

"Acute atrophy of the lung, combined with pulpy destruction, may further represent a form of pulmonary gangrene, which, at least on the dissecting-table, must be distinguished from other forms of mortification of the lungs.

"The coincidence of a relapsing tumor in the spleen, Peyer's and the mesenteric glands, with complete acute pulmonary atrophy, which latter represents a period of about four weeks, is also not without interest.

"As I have already done in my report above quoted, I forbear for the present to identify the desquamative pneumonia and its higher degrees, acute pulmonary atrophy and its consequent gangrene, with morbid conditions of texture, possessing, according to the description of other observers, analogy with them, and to which the synonym should be given only after fresh investigation. But I consider a revision and more accurate examination of the several inflammatory processes in the lung to be a not unimportant desideratum in pathological anatomy."

ART. 44.—*On Injections of the Bronchi in Pulmonary Diseases.* By Dr. J. HUGHES BENNETT, Professor of the Institutes of Medicine in the University of Edinburgh.

(*Edinburgh Medical Journal*, Nov., 1857.)

Dr. Bennett, it appears from this paper, has taken up Dr. Horace Green's plan (v. "Abstract," XXII. p. 237) of treating pulmonary diseases by injections into the bronchi, and he writes with "the view of recommending a practice which, if judiciously employed, may form a new era in the treatment of pulmonary diseases." What he has done already will appear from the following quotation from his paper:—

"My period of attendance on the clinical wards having expired in January, it was not until last May that I had an opportunity of making a series of observations on this subject. I was then fortunately assisted by Professor Barker, of New York, who showed me the kind of catheter he had seen Dr. Green employ, and demonstrated the manner in which the operation was performed. Without entering into minute particulars, I have only to say that I have confirmed the statements made by Dr. Horace Green. I have introduced the catheter publicly in the clinical wards of the Royal Infirmary, in seven patients. Of these five were affected with phthisis in various stages—one had chronic laryngitis with bronchitis, and one chronic bronchitis, with severe paroxysms of asthma. In several other cases in which I attempted to pass the tube, it was found to be impossible; in some because the epiglottis could not be fairly exposed, and in others on account of the irritability of the fauces and too ready irritation of cough from pressure of the spatula.

"My experience of this treatment is as yet too limited to permit my saying anything of its permanent effects. In the case of bronchitis with asthma, a female, æt. 24, I have now injected the lungs eleven times, at first throwing in two drachms of a solution of nitrate of silver, of the strength of half a drachm of the distilled salt to one ounce of crystallized water; and latterly I have

thrown in half an ounce of a solution of the strength of two scruples to one ounce. She declares that no remedy has had such powerful effect in lessening the cough, diminishing the expectoration, or delaying the asthmatic paroxysms. She breathes and blows through the tube, when inserted four inches below the larynx, and I have been surprised at the circumstance of the injections not being followed by the slightest irritation whatever, but rather by a pleasant feeling of warmth in the chest (some have experienced a sensation of coolness), followed by ease to the cough, and a check for a time to all expectoration."

ART. 45.—*On the use of the Microscope in the diagnosis of Phthisis.* By (1) Dr. GUSTAF VON DÜBEN, of Stockholm; and (2) by Dr. THEOPHILUS THOMPSON.

1. (*Dublin Quarterly Journal of Med. Science*, Nov., 1856.)

2. (*Lancet*, July 11, 1857.)

1. The following remarks are taken from a review of a work by Dr Düben, entitled "A Review of the Contributions yielded by the Microscope to Medical Diagnosis."

"If the practical physician meets with a patient who describes a previous pneumonia, of which his present illness is a consequence, or in whom the physical signs, in agreement with the history of the case and the rational symptoms, disclose the lesion which is developed in the lungs, he has no doubt as to the diagnosis. But if, on the other hand, he be called to a young patient, in whom all other modes of investigation are merely sufficient to establish the existence of a chronic catarrh, the microscope alone can decide whether this catarrh is uncomplicated, or whether tuberculosis lurks behind it. The honor of the discovery of the microscopic sign belongs to Professor Schroeder van der Kolk, of Utrecht, who published an essay on the subject which was translated into Swedish by Ehr. Ekströmer, Chir. Magr., and inserted in the 'Hygein' for 1859, pp. 21—39. Singularly enough, the matter seems to have attracted but little notice, although it is, as I can testify from extensive investigations, of the greatest importance; the positive result has never as yet been disproved by the issue of the case.

"We know from pathological anatomy that in pulmonary catarrh the mucous membrane of the bronchi only is destroyed, and even this imperfectly, whether the disease has an acute or chronic course. The same is the case with acute pneumonia in process of recovery. In none of these cases can we, therefore, *a priori*, expect to find in the sputa any other elementary parts than those belonging to this membrane, and experience has confirmed this view.

"In pneumonia, on the contrary, which assumes a chronic form, or where, through the formation of pus, destruction of parts of the lung takes place, other portions of the bronchi, besides the mucous membrane, are attacked and are destroyed by the ulcerative process. The same occurs in tuberculosis. In both these cases we may beforehand expect, and afterwards find, in the sputa, fragments of the bronchial walls. The characteristic point in the sputa, from vomica, is the presence of the elastic filaments of these walls; they are *never* wanting so soon as a progressive vomica is met with.

"So soon as these elastic elements are found in the sputum, they are certain signs of a vomica. It is, however, only important to seek them in cases where other signs are not sufficient to establish a certain diagnosis. Such a case is incipient tuberculosis.

"We usually find signs of more or less extensive chronic catarrh. The sputa consequently contain a great quantity of pus-cells, and of oval or round epithelium. They have all the external and microscopic characters of concocted sputa. If we now take out of such a sputum, with a forceps, a small portion from one of the clearer parts, we see in the white or whitish yellow mass, and bring it thinly spread out under the microscope, at a magnifying power of 250, we usually find in it fragments of the elastic tissue, particularly if the tuberculosis is still recent. Experience has, in fact, shown that the elastic tissue is more easily found when the disease has not lasted long, and for this there are two reasons.

"In the first place, in tuberculosis of small extent, the catarrh is more

limited to the bronchi coming from the tuberculized part; consequently, the formation of the sputa must take place there, and the latter therefore contain the object of our search in greater quantity; secondly, at the commencement of the ulcerative process, the tissue, being less completely destroyed, must yield large and more distinct portions to the bronchial secretion than afterwards, when a more violent action in the walls of the cavity breaks down the pulmonary tissue more perfectly before it can be separated. We have, therefore, in the sputum of recent tuberculosis, both a less volume to examine, and larger fragments to find—two very great advantages, as the question is precisely to be able to make an early diagnosis."

2. The remarks of Dr. Thompson are taken from the report of a meeting of the Harveian Society of London, held July 11, 1857. Dr. Thompson writes:—

"Many years since, Mr. Quckett detected elastic pulmonary tissue in the sputum of patients not previously considered consumptive, and it was for a time supposed that a peculiar granular appearance of the expectoration might be regarded as characteristic of tubercular disease, even in the absence of any trace of elastic tissue. Finding, after a time, that this appearance could not be relied on as an indication of incipient phthisis, and embarrassed by the multiplicity of objects often present in the expectoration, Dr. Thompson for a time discontinued the investigation, any sanguine expectations which he had entertained being further discountenanced by the testimony of Rainey, Addison, and Bennett; but in an interview with Dr. Andrew Clark (to whose sagacious observation and faithful descriptions the profession is greatly indebted), he had the gratification of learning that the subject had engaged his attention since the year 1846, and with such success as to enable him to show, in his lectures at Haslar, the real microscopical indications of tubercular sputum. With his friend's liberal and courteous assistance, Dr. Thompson soon became convinced that changes in the pulmonary vesicles, preceding the stage of destruction which occasions the elimination of pulmonary tissue, are manifested in the expectoration, and that information may thus be obtained, not only supplying valuable aid in diagnosis, but also furnishing instructive information regarding the morbid process concerned. Dr. Thompson showed, by a diagram enlarged from a drawing by Schröder van der Kolk, that when tubercular deposit is present in the pulmonary vesicles, there may be seen, contrasting with the usual epithelial cells, some which are dark, swollen, spherical; some more advanced, larger, and misshaped; others shrivelled or burst, and extruding nuclei, which nuclei, when enlarged, correspond with the 'tubercle corpuscles' of Lébert. The author then proceeds to show that the sputum of consumptive patients contains materials corresponding in appearance with the elements present in the air-vessels, and that before an amount of disease involving the elimination of elastic areolæ occurs, corpuscles of various sizes, jagged outline, setting free nuclei, and affording evidence of rapid disintegration, may be detected. The general moleculo-granular appearance (to which his attention had been originally directed, and which he much regretted having erroneously figured in his 'Clinical Lectures') was not conclusive; the sputum which is really characteristic containing isolated masses of moleculo-granular material, and having interspersed corpuscles of various forms, overgrown or jagged, and setting free nuclei; the various proportions of pus, or fat, or blood, giving collateral indications of the amount of surrounding deterioration in the lungs; while amongst evidences of rapid progress might be specified the appearance of large and numerous areolar meshes, still retaining their adhesion and elasticity. In chronic cases, portions of this tissue appear, inelastic, teased out, and broken down, in consequence of long imprisonment, whilst a diminished proportion of fat, and the appearance of cholesterine plates, and still more of earthy particles, were often indicative of a mode of restoration. The author proceeded to prove, by a brief narration of cases—

"First, that with the aid of the microscope positive conclusions, not attainable by auscultation, could sometimes be formed regarding the existence of pulmonary disease.

"CASE 1.—Mr. —, æt. 63, after an attack of pleurisy in the left side, during the spring of 1855, did not regain strength. Dull percussion and prolonged

expiratory murmur over a small portion of the right apex were the only important auscultatory signs; but the expectoration, under the microscope, was found to contain blood-corpuscles, moleculo-granular matter, and lung-tissue broken down and unbent. More positive symptoms of decided phthisis, as reported by his medical attendant in the country (Dr. Sylvester, of Trowbridge), soon appeared, and in a few months he died.

"CASE 2.—Mrs. E.—, a lady, æt. 39, whom Dr. Thompson attended with Mr. Marshall, of Bedford Square, during the early months of 1855, suffered from obstinate sickness, which was supposed to depend on gastric affection. The persistency of the sickness and the progressive emaciation inducing an examination of the chest, some dullness on percussion with increased vocal thrill was observed near the sternal end of the second intercostal space on the right side. A little expectoration was obtained, and was found to contain shrivelled cells, lung-tissue, and isolated masses of granules. Some improvement of the general health occurred under soothing hygienic and tonic treatment, and the administration of cocoblein. But early in the year 1856 the expectoration became copious and flocculent; dullness on percussion was more extensively obvious; near the inferior angle of the scapula a click was audible, shortly followed by cavernous breathing. In March she died. An interesting contrast to this history was afforded by—

"CASE 3.—A lady, æt. 38, who, in the autumn of 1852, had almost precisely the same auscultatory symptoms as were observable in Mrs. E.—; but the occasional, slight, cloudy expectoration, from time to time examined, exhibited ciliary cells, some with long tails, probably tracheal, some in masses, as though from the follicles; but there were no tubercular elements. In harmony with the encouraging testimony thus afforded by the microscope, the general symptoms continue favorable, and have hitherto, during a period of five years, negatived the gloomy prognostications which an accomplished auscultator had perseveringly maintained."

Secondly: the author adduced the advantage of microscopical observation in confirming doubtful signs.

"CASE 4.—E. T.—, æt. 51, in the winter of 1854 was attacked with cough, hurried breathing, and some symptoms of hectic. The left lung had been extensively consolidated in consequence of pleuro-pneumonia ten years previously. Over a small space near the lower angle of the left scapula a sound could be heard, of which it was difficult to determine whether the correct designation were subcrepitation or click. Dr. Andrew Clark, who also obligingly examined the expectoration, reported that it contained shrivelled cells, large cells with shrivelled nuclei, and some earthy matter, and, without receiving any history of the case, offered the diagnosis of 'Slight tubercular deposit, tending to restoration:' a diagnosis which was confirmed by the result."

Thirdly: Dr. Thompson described some favorable indications afforded by the microscope concurrently with the amelioration in the general condition.

"CASE 5.—Mr. —, æt. 22 (introduced by Mr. Pinching, of Gravesend), five feet nine inches in height, in the summer of 1854 had dull percussion and a murmur over the left pulmonary artery, but no crackle or click; the expectoration, however, exhibited lung-tissue, tubercle-corpuscles, and blood-discs. He took cod-liver oil freely, at one period to the extent of a pint and a half in a week; and had ioduret of neat's-foot oil (a grain to the ounce) rubbed into the chest. After a time the expectoration became chiefly bronchial, disposed to fibrillate, and free from lung-tissue. The weight of this patient increased from ten stone one pound to eleven stone nine pounds. He spent last winter in Madeira."

Fourthly: the author noticed the important evidence sometimes derivable from the sputum, indicative of rapidity in the progress of disease.

"CASE 6.—A lady in the country, æt. 43, who had been for two years the subject of phthisis, but whose friends did not fully realize the danger, had a decided aggravation of cough and weakness. Some expectoration; sent to town for examination; contained blood, copious pus-corpuscles, and numerous large meshes of pulmonary tissue, perfectly retaining their form and elasticity. A

very unfavorable prognosis was consequently given, which was verified by the death of the patient a few days afterwards."

The author, in conclusion, ventured to express the opinion that his statements, although brief, were sufficient to support his proposition, that the microscopical inspection of expectoration might often afford, at a very early period of consumption, definite information, not otherwise attainable, regarding the nature of the malady; that in the later stages of disease it might assist us to estimate the rapidity and progress, and at all times might furnish valuable aid in forming a correct prognosis regarding the course of the complaint. He trusted these few suggestions would stimulate to the investigation some of his professional brethren more accomplished in the use of the microscope, or more fortunate in the enjoyment of leisure.

ART. 46.—Notes on the Use of Glycerine in Consumption. By Dr. COTTON, Physician to the Hospital for Diseases of the Chest at Brompton.

(*Medical Times and Gazette*, June 27, 1857.)

There is much difference of opinion as to the influence of glycerine upon cases of consumption. Not a few medical practitioners consider it scarcely, if at all, inferior to cod-liver oil, whilst there are not wanting those in whose hands it has entirely failed.

"With a view of testing its effects (says Dr. Cotton), I administered it—in doses varying from one to two, and occasionally three drachms, twice a day—to twenty-three of the in-patients of the Consumption Hospital; notes being carefully kept by the resident clinical assistants, Dr. Stone and Dr. Sibbald. As the cases were not selected, and all of them were under the same dietetic and general hygienic conditions, the result may, I think, be regarded as a fair illustration of its influence.

"Only in five cases was there any improvement; in all of which the weight was slightly increased. In two of these, however, a much greater advantage was subsequently gained under the use of cod-liver oil; the weight of one patient having increased as much as two pounds per week.

"In seventeen cases, either there was no appreciable improvement, or the patients became worse; and one, in an advanced stage of the disease, ended fatally. In nine of these cases more or less improvement occurred from the after-use of the oleum aselli; in four instances, indeed, the gain in weight was very distinctly marked.

"In five cases the glycerine either caused sickness, or otherwise disagreed with the stomach.

"To any objection which may be raised that the glycerine was not given for a sufficiently long period, I would merely observe, that even in the cases where some improvement was noticeable, it appeared to me so probable that far greater good would accrue from the cod-liver oil, that I regarded a further trial of the other as unjustifiable; and that such an anticipation was, in some instances at least, not ill-founded, was sufficiently demonstrated.

"The following conclusions are, I think, irresistible, viz:—

"1. That glycerine has generally but little influence upon phthisical cases.

"2. That, as a remedial agent in consumption, it will bear no comparison with cod-liver oil."

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 47.—On Restrained Action of the Diaphragm in Pericarditis. By Dr. BARLOW.

(*Medical Times and Gazette*, Sept. 5, 1857.)

In some clinical observations, the other day, Dr. Barlow directed the attention of his class to the important indication furnished by the unduly restrained action of the diaphragm in certain cases of thoracic inflammation. He had especially noticed it in pericarditis, and more than once it had helped him to

a diagnosis. The subject of pericarditis, anxious to avoid the pain caused by any movement, holds his whole chest as immovable as possible, but especially restrains the actions of the diaphragm. In the case of a boy who was admitted with this affection, it was found that he had tied a broad belt tightly round his body, in order no doubt to conduce to this end. Another case, Dr. Barlow stated, had impressed itself upon his memory, in which this symptom was very well marked, and in which yet no pericardial rubbing sound could be detected. Death took place, and at the autopsy the pericardium was found full of pus, thus accounting for the absence of the friction sound.

ART. 48.—*A Case of Disease of the Heart, with great Dilatation of the Auricles.*
By Dr. MARKHAM, Physician to St. Mary's Hospital.

(*Proceedings Royal Med. and Chir. Society*, vol. i. No. 3, 1857.)

Such a pathological specimen as is here described rarely falls under the observation of the physician. That such deviations from a healthy condition of the heart are, for a long period, compatible with existence, is an interesting fact. The patient, it should be remarked, had both the means and strength of mind sufficient to subject himself to a rigid discipline in diet and exercise, experience having taught him that great suffering resulted from the slightest deviation from the rules prescribed for his guidance. In physical diagnosis, Dr. Markham points out that the case presents some special points of interest. It demonstrates, that a pulsation felt low in the right thorax, an inch and a half from the right edge of the sternum, may be cardiac, even though the heart be felt at the same time pulsating in the left thoracic region. Again, a heaving pulsation in this latter region does not always indicate hypertrophy of the left ventricle, for here it was nearly normal in size. The thrill, bruit, and pulsation arising in the right auricle, are strange phenomena. How were they caused? They occurred during the auricular diastole, and probably had, all three, a like origin. It does not seem probable that they were produced by tricuspid regurgitation, for the tricuspid valves were large and sound, and the bruit, rough and loud, was not of the soft bellows-blowing kind. Thrill, again, over the right auricle, our best authors tell us, associated with tricuspid regurgitation, is unknown to them. These phenomena, then, may perhaps have had their origin in the rush of blood into the auricle from the venæ cavæ—a source of cardiac bruit not recognized in auscultation. The absence of muscular structure in the auricles proves that the force of the venous current is of itself sufficient to carry the blood on into the ventricles, unaided by any auricular contractions; and even when, as in this case, the circulation is impeded by a contracted mitral orifice. This case is very interesting, as showing the extraordinary degree of deviation from its healthy state, of the heart, with which a long life is compatible, under certain conditions. It presents, in physical diagnosis, certain unwonted phenomena, little in unison with ordinary experience. It gives us a hint respecting the physiological action of the auricles; and it points out the value of medical art, in prolonging existence, when serious organic change has fallen upon a vital organ.

CASE.—The subject of the following history came under the observation of the author three days before his death. He was sixty-nine years of age, and had been subject to cough for forty years. Twenty-six years ago he suffered from dropsy, and his life even was despaired of, on account of the extent of the dropsical effusions. Fifteen years ago he was told that the dropsy, the spasms, the short breath, and palpitations from which he suffered were the consequences of disease of the heart. These particulars showed that for about thirty years the patient had been the subject of organic disease of the heart. Of late years the symptoms of heart-disease had increased; exertion of any kind was very difficult, and brought on severe spasmodic attacks. When first seen by Dr. Markham the last agony was manifestly near at hand. He could not lie down in bed; his breathing was labored; his pulse rapid and irregular. The scrotum and legs were distended with serum. The heart was felt beating with an extensive heaving impulse in the left lateral thoracic region, and also over the precordial region; the percussion sound over this region was extensively dull.

At a point about one inch and a half from the right edge of the sternum, and in the fifth intercostal space, a pulsation, synchronous with the ventricular systole, was visible over a space of about three-quarters of an inch; it communicated a strong thrill to, and forcibly raised, the finger. The stethoscope transmitted a loud bruit when placed over it. It was evident that the heart was much enlarged, and that there was extensive valvular disease in this case. But what occasioned the pulsation here described? The thrill and the bruit naturally suggested the idea of an aneurism; but how could an aneurism exist at such a part, and apparently without any connection with the heart or its great vessels? On the other hand, that the pulsation had no origin from the heart itself seemed indicated by the fact that the organ was felt beating in the left lateral region of the thorax. It was scarcely conceivable, indeed, under such circumstances, that any portion of the heart could occasion a pulsation so far away to the right edge of the sternum.

Necropsy.—On opening the thorax, the pericardium was found so distended as to reach across the chest, almost from side to side; its horizontal contrasted remarkably with its vertical diameter, and could not have been less than eleven or twelve inches. This enormous dilatation was caused by the dilated heart, and particularly by its auricles. On removing the organ, about three pints of blood, fluid and coagulated, escaped from its cavities. When the blood was wholly removed the heart fell together like a flabby membranous mass, having no trace of firmness in its texture. The right auricle occupied that portion of the chest, beneath the parietes, where the pulsation was felt; hence the pulsation, the thrill, and the bruit, took their origin within the right auricle. Both auricles were greatly dilated, especially the left, which measured sixteen inches in its widest circumference. The auricles also were reduced to the condition of mere membranous bags, no muscular tissue being perceptible in them, except in the appendix of the right. The right ventricle was dilated and hypertrophied; the left ventricle somewhat dilated; and the muscular tissue of both ventricles was in an advanced stage of fatty degeneration. The tricuspid opening was enlarged, but its valves were also enlarged and capable. The mitral opening was contracted into a hard narrow slit, about one inch long; the mitral valves being contracted, thickened, and united. The aortic valves were thickened, but capable.

ART. 49.—*On certain cases in which the Foramen Ovale was still patent in the Adult.* By Dr. J. W. OGLE, Assistant-Physician to St. George's Hospital.

(*British Med. Journ.*, June 13, 1857.)

This paper originates in a question arising out of a case recently recorded by Dr. Markham (v. "Abstract," XXV. p. 93)—can an open foramen ovale exist without a bruit? Dr. Ogle's answer is in the affirmative. He does not say that he has shown reason for supposing that a murmur cannot, under any circumstances, be produced by the passage of blood through an open foramen, but there are numbers of cases in which, although facility for the passage of blood from one auricle to another exists, yet no unnatural sound is thereby of necessity induced.

"In the year 1851," says Dr. Ogle, "whilst curator of the Pathological Museum at St. George's Hospital, I took the opportunity of examining above one hundred and forty human hearts taken indiscriminately after death, for the purpose of ascertaining the condition of their muscular fibres.* Of this number, I examined sixty-two with a view of discovering the condition also of the foramen ovale, and found that out of the sixty-two, there were thirteen hearts which retained this foramen yet incompletely closed, although to a variable degree; thus giving a proportion of about one in five hearts in which communication of some kind or other existed between the cavities of the two auricles. This is, I believe, a greater proportion than is generally considered to exist in the healthy human adult heart.

* The results of the examination for this purpose are detailed at page 68 of the 4th volume of the "*Transactions of the Pathological Society.*"

"These particulars, observed at the period I mentioned, have hitherto not been made available by me; but I have retained them in my note-book, thinking that at a future time some opportunity for their use might occur. Such an opportunity has been offered, in consequence of the observations of my friend Dr. Markham, regarding a case published by him in the number of this journal for April 4th, 1857. In this case of Dr. Markham's, a loud murmur coincident with the systole of the ventricles, and therefore synchronous with the diastole of the auricles, was heard along the base of the heart and in the entire left subclavicular region. Of some of his remarks in connection with the case, I shall speak at greater length further on.

"Having mentioned the fact of the comparatively frequent occurrence of an incomplete closure of the foramen ovale, I must qualify the observation by remarking, that the patency noticed allowed of very different degrees of communication between the two sides of the heart. In some of the cases, the opening remaining in the septum of the auricles was a mere fissure or oblique slit, arising simply from want of such an adhesion between the valves and the margins of the isthmus, as is wont to exist after the completion of the drawing up of the valvular fold and other preliminary contractile actions of neighboring parts. This defective adhesion, I may remark, is thought by Dr. Peacock to be the result of unequal pressure in the auricles from the blood, owing to the slow establishment of the pulmonary circulation after birth. The oblique slits, to which I have alluded, were directed variously, as it were, opening in some cases more widely from above, and in others from below, and would have allowed of the blood passing, as it would seem, more freely in some cases from the left into the right auricle, but in the majority of cases from the right into the left auricle. In several of these cases, the communicating opening was not merely that of a chink or slit, but was a decidedly round or oval aperture; in one case, admitting of the entrance of the tip of the little finger. In one or two cases, the opening was of a reticular character, having the appearance as if it had been produced by a falling short of one part of the margin of the valvular fold, so that it failed to be raised to the level of the isthmus, to which it ought to have been adherent; and as if the deficiency had been in part compensated for by bands passing across the vacancy. I was careful in my search for any trace of ulceration or of rupture which might have accounted for the opening, but this did not in any case exist.

"I have lately referred to the life histories of those cases which I have mentioned as presenting an imperfect closure of the foramen ovale, in order to ascertain what physical signs were noticed before death, which might be attributed to this imperfect closure.

"I will now enumerate the cases, and describe briefly the condition of the heart and also of the lungs in each of the thirteen cases in which I found the foramen only partially closed. Afterwards, I will add a short statement of the stethoscopic signs as observed during life, whenever I find that they were noted by my friend and colleague Dr. Barclay, who at that time was medical registrar at St. George's Hospital.

CASE 1.—A patient, æt. 41, affected by pneumonia, rheumatism, and eventually pericarditis. The chest was carefully stethoscoped when the patient came into the hospital, and special search was made for signs of pericarditis or endocarditis, but no *bruit* or friction-sound whatever was heard. After a time, when the anticipated pericarditis had appeared and become established, the ordinary murmurs were heard.

CASE 2.—A patient, æt. 37, was admitted into the hospital, and died with pulmonary phthisis and vomica. After death, the heart, which weighed eight and a half ounces, was found healthy and natural, excepting the patency of the oval foramen. In the life history it is expressly observed that "the only thing made out by physical exploration of the chest was slight harshness of breathing on the right side of the chest." These particulars are given, but there is no mention whatever of any unnatural sounds about the heart.

CASE 3.—A patient, æt. 25, was admitted into the hospital with dropsy and other symptoms of diseased kidneys. There were also symptoms of congestion of the lungs and enlarged heart; and a regurgitant murmur was heard at the

root of the aorta. In the life history it is expressly stated that there was no double murmur; in other words, that no murmur existed synchronous with the systole of the ventricles. After death, the heart, which weighed twenty ounces, showed small fibrinous granulations upon the surface of the aortic valve-flaps.

CASE 4.—A patient, æt. 38, died in St. George's Hospital of phthisis with vomica. The heart, which weighed ten ounces, was healthy, excepting the open foramen. In the life history a careful description of the physical exploration of the chest is given; but there exists no mention of any unnatural heart-sounds.

CASE 5.—A patient, æt. 32, who died of acute pleurisy and congestion of the lungs. In the life history, the physical signs, which were observed as connected with the lungs, are given; but no mention is made of any murmurs about the heart.

CASE 6.—A patient, æt. 37, who died of abscess within the brain, connected with disease of the inner ear. After death, the lungs were found to be greatly gorged with blood. The heart, which weighed nine and a quarter ounces, presented small shreds and granulations of recent fibrin attached to the aortic valve-flaps; but otherwise, saving the patent foramen, it was natural. In the life history, it is stated that "the lungs appeared only to be affected with bronchitis."

CASE 7.—A patient, who died with diseased kidneys and hypertrophy of the heart. After death, the lungs were found to be very gorged with blood. The heart weighed twenty-one ounces. Its walls were thick, and its cavities dilated; and its aortic valve-flaps, which were only two in number, were rigid and unpliant. It is expressly stated in the life history that "the heart's sounds were very feeble, but nothing abnormal was found."

CASE 8.—A patient, æt. 32, who died of pleurisy, and was moribund when brought into the hospital. Slight scrofulous deposit was found within the lungs after death; and one lung was rendered quite useless by compression, from fluid accumulated within the pleural cavity. The heart weighed fourteen ounces, its walls being thickened.

CASE 9.—A person, æt. 16, who died of peritonitis with bronchitis and pneumonia. The heart was natural, excepting the patent foramen. In the life history, the sounds of the heart are not alluded to directly or indirectly.

CASE 10.—A patient, æt. 38, was poisoned by prussic acid, and brought into the hospital dead. Excepting the open foramen, the heart was found to be natural.

CASE 11.—A patient, æt. 60, was brought into St. George's Hospital with disease of the bones of the foot, and died of pulmonary phthisis with vomica. The heart was soft and flaccid; but, excepting the open foramen, was quite natural. In the life history, I find nothing whatever bearing upon the sounds of the heart.

CASE 12.—A patient, æt. 45, who died of peritonitis and pneumonia. The heart, which weighed only five and a half ounces, was small; but, excepting the open foramen, natural. In the life history, I find nothing bearing upon the sounds of the heart.

CASE 13.—A patient, æt. 48, was admitted with a fistula *in ano*, and died of pulmonary phthisis. The heart, which weighed nine and a half ounces, was soft and lacerable; the walls of the right ventricle being thinner than usual. In the life history, I find nothing relating to the sounds of the heart.

"Thus, in the preceding cases, thirteen in number, in which the foramen ovale was found to be but incompletely closed after death, there are seven in whose histories it is emphatically stated or to be inferred that no murmur synchronous with the systole of the ventricles, that is also synchronous with the diastole of the auricles, existed; and only one in which there is notice of any murmur with the diastole of the ventricles, that is, with the systole of the auricles. Consequently, excepting in this last single instance, we have the fact of six hearts in which more or less patency of the foramen ovale existed, but did *not give origin* to any unnatural sound whatever about the heart. In the solitary instance (Case 3), in which a regurgitant or diastolic murmur (so called) was heard, the heart was very large and soft, and recent granulations and

shreds of fibrinous material, deposited from the blood, were adherent to the aortic valve flaps. It may therefore well be believed that this murmur was seated in the left ventricle, and had nothing to do with the septum of the auricles; if it had any such connection it must have been produced during the systole of the auricles, and therefore not at all similar to that in Dr. Markham's case, which took place during the ventricular systole, and was supposed by him to be produced during the diastole of the auricles. As regards the last six cases, in which the closure of the foramen ovale was imperfect, I am sorry to say that the life history does not afford data from which any conclusive evidence as to the presence of cardiac bruits may be derived. It will be remembered that in all these thirteen cases the patients were adults. In none of them was there any cyanosis noticed during life, or congenital malformation of the heart or its vessels found after death. Moreover, there was no such condition of the valves or orifices of the heart as should primarily or secondarily tend in any material degree to impede the blood's exit from the auricles, and thus, as it were, throw greater pressure and stress upon the septum along with other parts of their walls, and lead to a mixture of the venous and arterial blood through the foramen ovale. There was, however, in many cases, marked and extensive disease of the lungs, such as their occupation by the products of inflammation or scrofulous deposit, which, though to a less extent, would have a similar tendency as regards the right auricles.

"I may be permitted here, as I have his sanction, to append a case lately brought before the notice of the Pathological Society by Dr. Ogier Ward, which I will curtail. It bears strongly upon the point I am attempting to illustrate.

"The case was that of a child who died eleven days after birth, having been cyanotic and affected with dysphagia and choking on swallowing. The lungs and heart were auscultated during life, and it was noticed that the heart's sounds were natural, no bruit existing. After death, congenital communication between the trachea and œsophagus was found, with enlargement of the pulmonary artery, and patency of both the ductus arteriosus and foramen ovale. The preparation is now in the Museum of the College of Surgeons. This case, added to those related above, makes the seventh case in which the foramen ovale was more or less patent during life, and in which we have evidence that no bruit was thereby produced."

ART. 50.—*A Case in which Ulceration of the Large Intestine was followed by Obstruction of the Common Iliac Veins.* By Dr. FINCHAM, Physician to the Westminster Hospital.

(*Lancet*, June 6, 1857.)

In commenting upon the pathology of the case, the author adopts Dr. Lee's views, and considers the phenomena above narrated to be due to absorption of pus or some other morbid fluid from the mucous surface of the lower portion of the large intestine, in which ulceration had doubtless existed. He considers that by means of the hemorrhoidal veins it was quite possible for morbid matter to find its way into the large venous trunks, and he fortifies his view by referring to cases on record, in which painful swelling of the lower limbs, with symptoms of venous obstruction, was found co-existent with ulceration of the mucous membrane of the colon and rectum. He refers to the "*Medico-Chirurgical Transactions*" (16th volume), in which are recorded two cases of phthisis, in which ulceration of the large intestine had apparently caused symptoms similar to phlegmasia dolens; he mentions also other similar cases, though they were not verified by post-mortem revelations. He therefore considers absorption of morbid matters from the colon or rectum to be the primary cause of symptoms of venous obstruction in the case narrated, and that the tendency to coagulation was increased by the anæmic condition of the patient, and consequent increased proportion of fibrin, as compared with the red globules, and by the sluggish manner in which the blood would be propelled through the vessels by the weakened heart.

CASE.—The patient, æt. 15, came under Dr. Fincham's care on May 14th, 1856. He was very anæmic, with a soft, weak pulse, 120, but his appetite was good, and his skin of natural warmth; the urine was natural. He complained

of diarrhoea, the motions being relaxed and bloody, with much pain at the extremity of the gut on going to stool and during defecation. Some pain also existed in the hypogastric and left inguinal regions, though the abdomen generally was soft and yielding. The rectum was examined by finger and by speculum, without detecting anything; the motions were, however, very slimy, offensive, and bloody. The symptoms yielded to treatment, and upon their return he was readmitted into Westminster Hospital. The frequency and the nature of the evacuations were now improved, but blood was still passed. On July 4th, without any rigor, he complained of pain about the right knee, the soft parts about being swollen and oedematous. On the 5th, the swelling, though less, had extended up the thigh. On the 7th, there was pain, increased by pressure, over the iliac and inguinal regions, the pain extending a short distance down the inner aspect of the thigh; there was fulness though no hardness in these parts. On the 10th, there was oedema of the right foot. On the 16th, the pain diminished, and the general swelling was reduced, but on the next day both symptoms were aggravated; the right thigh and the inguinal region had become very painful and swollen, and the superficial veins distended. Though the pain was very severe, there was no fever nor constitutional symptoms. On the 18th, the superficial veins over the whole abdomen, as well as those on both of the lower extremities, became considerably distended. On the 23d, the parts affected remained oedematous, with the scrotum, until the middle of August, when it disappeared; the superficial veins, however, never diminishing to any notable degree. He was discharged towards the end of both months, when his condition was as follows: There was great enlargement of the internal saphena veins; the abdomen and the flanks were covered with a network of vessels manifestly consisting of enlarged and tortuous branches of the epigastric and circumflex iliac veins, through which, as was evident on pressing them, the blood flowed in an upward current. This network of veins communicated with the mammary vein, enlarged branches of which were visible at the chest; by this channel, and through the intercostals (probably), the blood was returned to the heart. This state of things existed on December 30th, when he was last seen.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 51.—*On the Prevention of Constipation.* By Prof. PHÆBUS, of Giessen.
(*Prag. Vierteljahrsschr.*, Bd. lii.; and *Med. Times and Gazette*, May 23, 1857.)

Professor Phæbus refers habitual constipation to the following causes, which may act separately or together:—

1. The too spare employment of articles of diet which promote the action of the bowels. Among these water is to be placed in the first rank. Either from its not being of convenient access, or its quality being bad, this drink is taken by many in insufficient quantity. In sedentary occupations the sensation of thirst is too seldom excited, and the habitual frequency of such sensation may become much diminished if the satisfaction of the call be neglected. To this class of aliments also belong fruits, salads, sour milk, honey, and fat. Many country people, who sell all their produce, eat little of these things except salad; and the poorer inhabitants of towns often get them only in insufficient quantity. Those persons who can procure them usually eat salads and fats in too small quantities; sour milk easily excites diarrhoea, fruits may cause flatulence, and honey is not always obtainable good.

2. Too little bodily exercise.

3. Want of exercise of the powers of the large intestine. This is the most influential of all the causes. It is an error to suppose that the power of the will extends only over the sphincter; for it prevails much higher, only it requires considerably more time for its exertion. Several minutes, or a quarter of an hour, may be required to imitate the evaculatory movement, and the uninitiated may fail altogether in the attempt. By exercising it, we increase the disposition of the intestine to act, but, under any circumstances, this is rarely

the case in less than five minutes. By paying attention we may plainly feel the intestinal movement, and convince ourselves that it is independent of the action of the abdominal muscles: for although the action of these muscles gives the first impulse to the movement, they contribute little or nothing to its progress.

Numerous are the remedies which have been recommended for constipation; but the action of medicinal substances in so chronic an affection may easily become prejudicial; and especially such as exert a chemical or functional action, such as the salts or drastics. In the great majority of cases no other means are required than those indicated by the above-mentioned causes. The commonest of these is the want of exercise in the large intestine. If a stool is desired, the patient must earnestly practise the necessary gymnastic, which consists in alternate movements of the rectum as during actual evacuation, and in rapidly drawing in and then expanding the abdominal muscles. Such movements may be commenced in the chamber and completed in the closet, several minutes, a quarter of a hour, or even more, being required. If evacuation has commenced, but has not proved productive enough, the movements must be continued, the person making a firm resolution not to quit the closet until the aim has been completely attained. The movements are, in fact, the same as those normally employed; but they are more rapid, and continued for a longer time. Kneading and rubbing the abdomen, recommended by some, are also useful, but as a general rule they are quite unnecessary; and may be reserved for those who are not able to follow the above directions, such as children, insensible persons, &c.

As a general rule, an adult should compel a stool every day; and the author does not agree with the statement that some individuals may be content with fewer, believing that such constipation often aggravates morbid conditions. In from four to eight weeks, and without the necessity of observing the same hour, a complete mastery may be acquired over the intestine, so that a stool may be always secured once in the twenty-four hours. Although this is the most powerful agency in overcoming habitual constipation, and will succeed alone, yet it acts more efficiently when conjoined with articles of diet favorable to an open state of the bowels. A larger quantity of water will be more easily drank if at first carbonic acid gas be added. An adult, during winter, should take from sixty to eighty ounces daily (deducting from this the equivalent of any artificial drinks he may take), a larger quantity still during great bodily exertion, and from one and a half to twice the quantity in summer. When raw fruit gives rise to flatulence, it may be taken cooked with spices, and especially when dried and cooked. With greater regularity of stools, also, flatulence becomes less, the food being retained for a less time within the canal. Other articles of diet, as salads and fat, should also be taken in moderation. Exercise, whether on horseback or foot, if continued, is of great service; but it exerts no sudden effect, and at first may even induce constipation.

Trying the plan upon himself when a student, the author has, during twenty-eight years of practice, recommended it to an immense number of persons, and in the great majority of cases with complete success. For himself he has attained the power of procuring a daily stool at any convenient time between four o'clock A.M. and mid-day, the average time required being a quarter of an hour. Only on one occasion during thirty years has he failed in his object. Where it fails it is from the want of the necessary strength of purpose. The plan is not so suitable for the aged; and is inapplicable to women during advanced pregnancy, or in organic disease or prolapsus of the uterus. When from insufficient perseverance the means does not succeed, cold water clysters form the best supplement; and, exceptionally, salt and oil, with chamomile tea, &c., may be thrown up. The author never gives purgatives by the mouth in chronic constipation, believing it to be most impolitic to irritate the stomach and small intestine, disturbing chylipoiesis, and introducing into the blood materials that are always more or less injurious.

ART. 52.—*On Gastro-colic Fistula.* By Dr. MURCHISON, Assistant-Physician to King's College Hospital.

(*Edinburgh Medical Journal*, July and Aug., 1857.)

Dr. Murchison's object in this very elaborate and valuable memoir, is to bring together an account of the cases of gastro-colic fistula which have been recorded, and of the preparations which exist in our museums, in order to draw some conclusions as to the pathology and diagnosis of the lesion. Upwards of forty periodicals, English, American, and Continental, and all the anatomical museums within reach, have been carefully ransacked for material. The proper subject of the memoir is also introduced by some general observations on fistula of the digestive canal, in which some valuable information will be found.

Thirty-three cases of gastro-colic fistula are related, which may be classified, as regards the mode of origin of the fistula, in the following manner:—

Cancer commencing in stomach	20 cases.
“ “ colon (case 11)	1 case.
Simple ulceration commencing in stomach in two cases, with sloughing	8 cases.
Simple ulceration commencing in colon (case 6)	1 case.
Abdominal abscesses originating external to both stomach and colon	2 cases.
Softening of tubercular matter	1? case.
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And with respect to the situation of the opening in the stomach, the analysis of these 33 cases gives the following results:—

In 4 cases, opening at or near fundus (4, 5, 19, 32).
In 10 “ “ great curvature (2, 6, 8, 9, 11, 18, 27, 29, 30, 31).
In 11 “ “ at or near pylorus (7, 10, 12, 13, 14, 20, 22, 25, 26, 28, 33).
In 8 “ “ doubtful (1, 3, 15, 16, 17, 21, 23, 24).

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In reference to the diagnosis of gastro-colic fistula, Dr. Murchison considers the symptoms according to three different stages of the affection—the previous disease, the period of formation of the fistula, and the fistula fully established.

“I. *The symptoms of the disease which give rise to the fistula.*—The great majority of cases (28 at least out of 33) have been found to result from either cancer or simple ulceration of the stomach. The symptoms of these affections (epigastric pain, vomiting, cachexia, &c.) are sufficiently characteristic, and so well known, that it would be superfluous here to consider them. I would merely desire to impress the importance of ascertaining the previous existence of either of these complaints in cases of suspected gastro-colic fistula. Moreover, as the fistula is more than twice as frequently a sequela of cancer as of simple ulcer, the existence of an epigastric tumour would, *ceteris paribus*, be favorable to the supposition of its existence. Out of the 21 cases depending on cancer,

In 10, the history is either absent or imperfect (1, 5, 12, 13, 14, 15, 16, 17, 22, 23).

In 3, a tumor was absent or not mentioned (9, 10, 32).

In 8, a distinct tumor could be felt (7, 11, 18, 20, 26, 28, 31, 33).

Thus, out of 11 cases of cancerous fistula, a tumor was detected during life at least in 8. In case 29, also, in which there was no cancer, ‘a firmness’ was felt on pressure over the epigastrium.

“II. *Symptoms at the period of formation of the fistula.*—It is probable that

sometimes the fistula may form without any characteristic addition to the previously existing symptoms marking its advent. Thus, in case 2, the first symptom of the fistula (fecal vomiting) came on suddenly, after some weeks of dyspepsia, when the patient was walking in the street, and was attended by no other unpleasant feeling. In many of the cases, however, the formation of the fistula appears to have been accompanied by some local symptoms, or by disturbance of the general system; and perhaps this has more frequently been the case than has been observed. Thus, in case 11, the symptoms indicating the existence of fistula were preceded by pain in the abdomen and the passage of shreds of disorganized mucous membrane *per anum*; in 18, by diarrhœa; in 20, by general pain over the abdomen, urgent vomiting, and quick pulse; in 21, by violent pain in the belly; in 26, by the symptoms of peritonitis, sudden violent pain in the abdomen, vomiting, collapse, &c., while, at the same time, the patient himself felt 'as if something had burst in his belly.' In case 29, there was pain and sickness for several days; and in 33, rigors, great prostration, vomiting, brown tongue, and irregular, intermitting pulse. Cases 11 and 26 particularly deserve attention in future observations.

"III. *The symptoms and physical signs after the formation of the fistula.*—When a communicating aperture has been formed between the stomach and colon, there is no barrier to prevent the contents of the one viscus passing into the other, fecal matter from entering the stomach, crude and undigested food from passing into the colon, and so being voided *per anum*. These results are what might have been naturally expected from the new condition of the parts; and they are what we actually find. Fecal vomiting and the presence of undigested food in the stools are the most frequent and characteristic symptoms of gastro-colic fistula. I shall now consider each of these symptoms, as well as some others, a little in detail.

"1. *Vomiting.*—This has been an almost invariable symptom in all the cases observed during life, in which there has been a free communication between the stomach and colon: and in the majority of cases the vomited matters have contained feces. The following analysis shows the frequency of the symptom in the 33 cases:—

- In 11 cases, fecal vomiting (2, 7, 8, 11, 18, 19, 21, 27, 29, 31, 32).
- " 3 " vomiting very fetid (9, 20, 33).
- " 3 " vomiting not fecal (10, 25, 26).
- " 2 " no vomiting (4, 28).
- " 2 " history imperfect (1, 30).
- " 12 " no history (3, 5, 6, 12 to 17, 22, 23, 24).

"1. Fecal vomiting is probably present in all cases in which the opening (except this be very minute) is situated in the fundus, or great curvature of the stomach, and may also be present when the disease is the pylorus.

"In all cases in which only food is vomited, the opening is at or near the pylorus, so as to preclude the passage of food.

"The fact that food only should be vomited, when there is great obstructive disease of the pylorus, is what might have been expected, and admits of another explanation besides that given by Dr. Gairdner. When there is great obstruction at the pylorus, all the food will pass at once in the colon, and so down to the rectum, and little or none through the pylorus into the small intestines. But if no food enter the small intestines, no feces can be formed before arriving at the opening in the arch of the colon, and none can enter the stomach. This diminished function of the small intestines accounts for the fact, that after death, in several cases, they have been observed contracted and empty.

"In cases of cancer of the pylorus, vomiting might be less after the establishment of the fistula than before; the food in the former case escaping at once in the colon.

"It is not to be forgotten that fecal vomiting may originate from other causes, such as any obstruction of the bowels, as from strangulated herniæ, intussusceptions, organic stricture, &c. The history and the other concomitant symptoms of such cases, are generally sufficiently marked to prevent the possibility of their being mistaken for gastro-colic fistula. At the same time it

is possible to have organic disease of the stomach, accompanied by stricture of the colon, as in a case recorded by Mr. Holmes, in the 'Edinburgh Medical and Surgical Journal,' vol. viii. p. 151; and, if fecal vomiting occurred under such circumstances, the diagnosis would be difficult. There is one distinction, however, between the fecal vomiting in any of these affections, and that from gastro-colic fistula, which it is important to bear in mind. In the case of obstructive disease there is also obstinate and intractable constipation; whereas, in gastro-colic fistula there may be diarrhoea, or, if the bowels are costive, there is no great difficulty in moving them.

"2. As another consequence of feces entering the stomach, there may be a *fecal odor of the breath*, and an intolerable *taste of feces*, as in case 29; or there may be peculiarly fetid eructations, as in cases 8 and 9. In two, if not in all three cases, there was also fecal vomiting.

"3. Again, in cases where a cavity exists between the stomach and colon, which also open outwards through the abdominal parietes (3, 11? 33), *food, as well as fecal matter, may escape through the external opening*. In case 3, there is no history; and in 11, it is doubtful if the external opening passed into the cavity. Fetid gases and fecal matter, however, were observed to exude from the external fistula in case 33; and, although there is no mention of food having been observed in this case, it is possible that this may have been overlooked. In connection with this point, there is an interesting preparation in the museum of Charing Cross Hospital (G. 21). This is a cancerous stricture of the arch of the colon, in which the colon above the stricture communicated with the duodenum, and also through the abdominal parietes, with the external surface. In this case, 'any fluid taken into the stomach, flowing by the duodenum into the colon, made its appearance in a few minutes at the umbilicus.'

"4. *Passage of undigested food per anum*.—It is to be regretted, that in so few of the cases was any observation made upon this interesting point. In 7 only is there any mention made of the appearance of the stools after the probable formation of the fistula (2, 8, 18, 19, 25, 29, 32). In 18, they resembled the matters vomited, and contained curdled particles of milk (the sole article of diet); and in 32, milk and other substances, if not vomited, 'passed off instantly by the bowels.' In case 29, the stools had the same character as the matters vomited, which consisted of 'feces mixed with undigested food;' and in 2 and 19, the stools and vomited matters are described as undistinguishable. In 25, the stools were described to Dr. G—— (by nurse?) as normal; yet half-digested food was found in the colon after death. In case 8 only are the stools said to have contained no undigested food; yet they were imperfectly formed, being pale, like those of jaundice; so that milk, of which probably the patient's diet principally consisted, would have been difficult of detection in them.

"For the same reason that fecal vomiting is rarer when the pylorus is obstructed, it may be expected that future observations will show that undigested food in the stools is then most common. The food cannot pass through the intestinal tract to form normal feces, but escapes at once, by a short cut, to the anus. The greater the obstruction at the pylorus, the more readily will the food pass at once into the colon (provided the aperture of communication be of sufficient size); and consequently the less probability will there be of fecal vomiting, and the greater of undigested food being observed in the stools.

"Undigested food may be found in the stools under other circumstances than that of gastro-colic fistula; but these as yet do not appear to be very clearly understood, for medical men too often rely for the appearance of the stools upon the observations of the nurse or of patients themselves. This symptom is occasionally observed in the diarrhoea of children. Dr. Lyons, likewise, has recently observed in the Crimea a form of diarrhoea, in which 'the egesta often differed in appearance but little from the ingesta; thus solid fragmentary particles of various kinds of food, animal as well as vegetable, could be readily detected in the feces, still preserving their ordinary physical qualities.' This affection was attributed to an atonic condition of the alimentary canal, and to the difficult assimilation of the 'preserved meats and vegetables,' on which the

troops were fed. None of the cases proved fatal. The same symptom may also result from ulceration of the pylorus, producing a widening of this orifice, and destroying its action as a sphincter during digestion. Schönlein describes such a case, in which pieces of fish, potatoes, &c., were found undigested in the stools. He also mentions the manner in which he succeeded, during life, in distinguishing the affection from gastro-colic fistula. He gave the patient a meal, of which the ingredients were colored with cochineal, in order to see how soon the coloring matter would appear in the stools. This meal was followed by seven stools; and it was only in the seventh (almost twelve hours after the meal) that the coloring matter first appeared. Hence he concluded that his case was one of widening of the pylorus, and not of gastro-colic fistula.

"Although the causes which may give rise to the presence of undigested food in the stools have not been much studied, the observation is one of great antiquity. It is this affection which Hippocrates and all the old authors described under the name of *Lienteria*. Galen, in his commentary on one of the aphorisms (lib. vi. aph. 1) of Hippocrates, tersely observes: '*Levitas intestinorum (vel lienteria) est velox exitus eorum quæ comeduntur atque bibuntur, quæ talia deficiuntur, qualia fuere devorata.*' This lienteria was supposed to depend on two causes, paralysis of the stomach and intestines, or ulceration from acridity of the humors; the former being distinguished by the absence, and the latter by the presence, of pain. It seems highly probable that gastro-colic fistula existed in some cases of the so-called lienteria.

"5. *Emaciation*.—This was particularly noticed in 12 out of the 21 cases of which there is any history; and in all it probably existed. In most it no doubt depended on the original disease; but in case 18 it is noted as particularly rapid after the formation of the fistula; and in case 11, as only commencing after this.

"6. Among other symptoms of less importance may be mentioned the following: The appetite for the most part failed entirely; but in one case (29), it was noted as craving and accompanied by great thirst. In one case (26), the vomiting, which had previously existed, seemed to cease for a time after symptoms which indicated the perforation. But sudden cessation of vomiting may take place in the latter stages of ordinary cases of cancer of the stomach. In case 25, the vomited matters contained sarcinæ. In 5 cases (2, 10, 11, 25, 31), hæmatemesis is noted as having occurred; and in case 10 this seems to have been the most prominent symptom during life, and was accompanied by severe colic and melæna. In 3 cases (8, 21, 29), loud rumbling noises were frequently heard in the abdomen. The bowels were generally very costive (11, 19, 20, 21, 25, 26, 33), which symptom, when neglected, always was followed by an aggravation of the fecal vomiting; in 4 cases, however, there was diarrhœa (9, 18, 23, 31); in 10 and 23, the stools contained blood.

"An alteration or absence of the voice was observed in 3 cases (1, 18, 26). Some stress has been placed upon this, as a diagnostic symptom, by Diruf; but in the two last cases, at least, this appeared to result merely from the state of collapse of the general system; and in 26, the voice returned with the disappearance of collapse.

"In six cases (8, 11, 20, 28, 29, 33), death was preceded by general dropsy, or anasarca of the lower extremities; and in 1 (28), by purpura.

"In most cases there was pain referred to the epigastrium, or some part of the abdomen; but in 2 cases the absence of this was remarkable. In 21, there was no pain for many months before death, although this at first had been severe; and in 19, in which the fistula existed for upwards of two years, so little inconvenience was experienced that the patient was able to follow his ordinary employment till within three months of death.

"7. *Auscultation and percussion*.—It is not probable that either of these means of diagnosis will be of much service. At the same time, from observations made in certain of the cases, they demand a passing notice. Dr. Levinstein, in case 8, heard, on applying the stethoscope over the left hypochondrium, gurgling râles, similar to what are heard in a vomica of the lung; and from this he diagnosed the existence of some internal fistula of the stomach, which,

from other symptoms, he concluded to be connected with an abscess of the liver. Notwithstanding the approach to accuracy of Dr. Levinstein's diagnosis, the value as a diagnostic symptom of gurgling râles heard over the stomach appears very questionable. In case 29, a 'splashing sound' was heard on percussion of the abdomen. Again, in 2 cases (18, 31), a hard tumor was felt in the epigastrium, which, in place of being dull, yielded a tympanitic sound on percussion. In case 31, this sign attracted the particular attention of Dr. Bell, who was perfectly ignorant of Diruf's previous observation. It may have been due to the excavated nature of the tumor.

"8. *Vomiting of enemata*.—A very interesting observation was made by Dr. Reeves in case 32. Fluid enemata, if much force was used in their administration, passed from the colon into the stomach and were vomited. This fact suggests an important aid to our diagnosis. If in any case a colored enema was rejected by vomiting, the existence of a gastro-colic fistula would be rendered almost certain. The passage of the enema into the stomach would be favored by elevating the lower part of the body during the experiment.

"From the symptoms which have just been enumerated, it must be obvious that the diagnosis of gastro-colic fistula need seldom be a matter of doubt.

"1. We have, in the first place, almost invariably the symptoms of either cancer or perforating ulcer of the stomach for a greater or less period.

"2. Then we have symptoms, more or less marked, indicating the formation of the opening.

"3. When the opening is fairly established, there is very generally vomiting of feces.

"4. Fecal vomiting, supervening upon the symptoms of cancer or perforating ulcer of the stomach, would render its diagnosis tolerably certain.

"5. Where fecal vomiting is absent, there will be the greater probability of our finding lenteria; and this, with the other symptoms and signs enumerated, would in general leave little doubt as to the nature of the case.

"6. When there is lenteria without fecal vomiting, there will probably be found disease of or near to the pylorus, or a very large fistulous communication.

"7. In a case with neither lenteria nor fecal vomiting (which probably will never occur, except the communicating aperture be very small), it is unlikely that the lesion would be suspected; but even then its existence might be guessed from observing a greatly increased rapidity of emaciation, and a relief from previously existing pain, combined with the results to be derived from colored enemata and percussion."

ART. 53.—*Enlargement of the Spleen and the Lymphatic Glands generally.*

By Dr. ROGERS, Medical Registrar to St. George's Hospital.

(*British Med. Journal*, May 16, 1857.)

The following case occurred under the care of Dr. Page, in St. George's Hospital.

CASE.—M. B.—, a housemaid, æt. 39, who generally enjoyed good health, was admitted on February 9th, 1856. A month before admission, she had a smart attack of fever, and during her convalescence, perceived an enlargement in the left hypochondrium, for which blisters were applied. On February 7th, œdema of the legs came on. When first seen, the abdomen was very tense, and indistinct fluctuation could be felt. She complained of burning pain in the splenic region; and here there was greatly extended dulness on percussion. There was no vomiting; the bowels were costive; the tongue dry and brown; pulse 108, full, and easily compressed. Her appetite was indifferent, and she slept badly. The face was sallow, and her general appearance cachectic. Fomentations were applied to the abdomen; five grains of blue pill given at night; and a saline draft every six hours. The urine was examined on the following day, and found to contain beautifully perfect and very large crystals of uric acid.

February 13th.—She had an attack of erysipelas, confined to the neighbor-

hood of the right temple. At this time there was more pain and distension of the abdomen, dependent chiefly on flatulence and constipation.

Three days later, all the erysipelatous inflammation had vanished; her bowels were open; the skin moist; and she seemed improving; but there was remarkable feebleness of the pulse, for which port wine was ordered.

21st.—The abdominal swelling had increased, and there was more distinct fluctuation, and a depression just below the ensiform cartilage. The allowance of wine was augmented, and quinine given three times a day.

She went on much the same up to the 27th, when she was attacked with dyspnoea and acute pain in the back. Both legs, but especially the right one, were very anasarcaous. The urine contained a small quantity of albumen.

29th.—The pain in the left side of the abdomen was so severe that nothing but constant friction by an attendant gave the least relief. The glands in the neck and groin were noticed as large and hard, but there was no tenderness in any of them.

March 2d.—Delirium came on; her features were more pinched and sallow; and by the evening of the 3d, she was moribund.

An examination of the body was made thirty hours after death. The pectoral muscles were small and pale. The pericardial sac contained a little clear yellow fluid. The heart was small, with a white patch on its surface. The valves and orifices were natural. The lymphatic glands about the root of the heart were very much enlarged, and very solid. The anterior mediastinal glands were not affected. The left pleura contained a large amount of turbid fluid; the right pleura was about a third full of clear yellow serum. The base of the right lung was consolidated to a very slight extent; and, with this exception, the lungs and bronchial glands were healthy. The peritoneal cavity contained three pints of clear yellow fluid. The mesenteric glands were enlarged. The kidneys were very granular in one or two places, their capsules being adherent; they were of an uniform yellow color, their surfaces being marked by stellate vessels. In the pelvis of the left kidney, a considerable amount of bright clear uric acid was found. The liver was very large, with sharp well-defined edges; its surfaces, both outer and sectional, were marked by light-colored spots of various sizes, but none exceeding that of a pea. The spleen was of a dark blue color, and very large, reaching down as far as the anterior superior spinous process of the ilium: the upper and smaller end being flattened against the diaphragm, and bent on itself. It weighed four pounds. On section, it showed several light wedge-shaped patches, which a microscopic examination discovered to be of the same kind as those observed in the liver. The pelvic, dorsal, and lumbar glands, and those about the pancreas and the small omentum, were all very large and firm, some of a light flesh-color, others dark and somewhat softer. The whole chain of glands along the iliac and femoral vessels, on both sides, was affected in a similar way. The thyroid gland was also large; and the deep cervical glands were firm, large, and dark colored. The cranial bones were natural. The dura mater was very adherent to the vault of the skull, and its inner surface was lined at the vertex, within an exceedingly thin layer of soft fibrine, discolored by specks of bloody coloring matter. In other respects the brain was natural.

Dr. Ogle, the pathological curator, made a careful microscopic examination of the enlarged glands, and of the diseased patches in the spleen and liver. Immense numbers of white corpuscles were found; and bodies like pus-globules with occasional large cells or vesicles, with large nuclei, the number in each cell varying from one to four. In the splenic blood, besides the above elements, large cells, with seven or eight nuclei of great size, were seen; and similar bodies were found in the inferior vena cava and azygos vein. The blood in the cranial sinuses was natural.

ART. 54.—*Case of Suppuration of the Spleen.*

By Dr. CATHCART LEES, Physician to the Meath Hospital.

(*Dublin Hospital Gazette*, Sept. 1, 1857.)

Suppuration of the spleen is seldom met with, and its symptoms are generally

very obscure. Dr. Lees made the diagnosis of enlarged spleen from the physical signs alone, as there was nothing in the history of the case or in the symptoms, indicative of disease in that viscus (or indeed of suppuration in any part), unless we may regard the bleeding from the nose as such.

Dr. Morehead, in his recent valuable work, "*Researches on Diseases in India*," vol. ii. p. 165, states that he never saw a case of abscess of the spleen, and Rokitsansky says, that "though inflammation of the spleen may occur as a primary affection, yet it is as rare as spontaneous primary inflammation of a vein, but as a secondary affection it is as frequent as a secondary phlebitis, being in fact identical with that process, and nothing more than the metamorphosis of an infected conglutulum within the channels of a vascular ganglion."

CASE.—A delicate looking man, æt. 23, a laborer much emaciated, has a large irregular-shaped tumor occupying the left hypochondriac and lumbar regions, and extending upwards laterally, as there is dulness on percussion up to the left axilla. That side appears bulged out, and is an inch larger than the right; but there is no obliteration of the intercostal spaces, no cedema of the side, or distended veins over that part; nor is there any displacement of the heart. There is slight dulness posteriorly, but respiration is audible all over that lung, feeble posteriorly and mixed with sibilant and sonorous râles, but puerile under the clavicle. The tumor feels hard, but is not tender, and he lies best on the right side. He states that he has been delicate for the last three years, with an occasional sense of soreness in the left side of the abdomen, and has gradually become weak and emaciated, but never had intermittent fever. He has never vomited blood, or passed any from the bowels, but is very subject to bleeding from the nose, often two or three times a day. There is no ascites nor cedema of any part. His pulse is small and quick, but he is not subject to rigors or perspiration. He died quietly a few days after this report, and on examination the spleen was found enormously enlarged, and full of purulent matter inclosed in a cyst, formed by the obliterated parenchyma, which had been converted into fibrous tissue. The other viscera were sound.

ART. 55.—*Case of congenital absence of the Supra-renal Capsules.*
By Dr. MARTINI, of Florence.

(*Glasgow Med. Journal*, July, 1857.)

This case was communicated in a letter to M. Flourens, and by him read before the Academy of Sciences at Paris.

CASE.—"In one of the wards of the Hospital of Incurables, Naples, G. M.—, a man, aged forty years, died of pulmonary tuberculosis. On inspection, M. Martini was surprised at first not to find the kidneys in their proper place, but soon perceived, over the promontory of the sacrum, the existence of a lobular ovoid mass; this was a fusion of the two kidneys into one single body.

"This renal body received from the aorta a single emulgent artery, which soon divided into four branches, corresponding to the venous branches, which likewise reunited in one emulgent vein. Two ureters of the ordinary calibre, but very short, went to the bladder. The mass of this body was divided into five lobes, and its anatomical structure was that of a normal kidney. This anomaly was accompanied with a total absence of the supra-renal capsules, of which there was not a single trace, nor, on minute dissection of the five lobes, could any vestige of them be seen.

"This man had a white skin; had lived up to forty years, and died of a malady of the chest; he had sufficient strength to work at his trade of joiner; was married, and had three sons."

ART. 56.—*The gaseous treatment of Intestinal Obstruction.*
By Mr. TATE, of Westpoint, Georgia, U. S.

(*Southern Med. and Surg. Journal*; and *Dublin Med. Press*, Oct. 14, 1857.)

The following case is cited, not for imitation, but as a surgical curiosity. The patient was a negro, æt. 27, who had suffered for two days from strangulated inguinal hernia on the right side, upon whom the ordinary operation for

that accident had been performed a few hours previously. The treatment in other respects had been vigorous, comprehending bleeding to syncope, chloroform to the limit of safety, and purgatives, as will appear, beyond all ordinary bounds. The time is the afternoon of March 18, 1857.

"Being well satisfied," says the author, "that an intussusception, or other mechanical obstruction, existed above the strangulated point, and having, as I conceived, used every remedy worthy of trial in such a case, I determined to proceed upon my own responsibility, let consequences be as they might; therefore, I began again the use of warm water enemas, throwing them into the bowels slowly and cautiously, and after having introduced, by a pump syringe, one gallon of water, I next dissolved forty grains of tartaric acid in four ounces of water, and introduced that into the intestine; had a large compress prepared and placed in the hands of a strong negro fellow, with instructions to apply it to the anus, and hold it there, so as effectually to prevent the escape of either gas or water after I should introduce forty grains of bicarbonate of soda, dissolved also in four ounces of water. The soda was introduced, the compress used admirably, and poor Will, rolling on the floor, cried at the top of his voice, 'I shall burst, I shall burst; take that thing away, my bowels are tearing in two.' The compress was removed; gas, water, and fecal matter escaped freely, to the astonishment of all by-standers. In half an hour the same amount of warm water, tartaric acid, and soda, were used again, and with the same happy effect.

"The only medicine given after this was calcined charcoal, which passed through his bowels with no difficulty. All being well satisfied that the obstruction was fully overcome, and Will declaring himself cured, he was discharged on the 20th. Now, as to the *rationale* of the treatment, we presume all who are at all familiar with the anatomy of the intestines, or the generation of gases and their expansibility, will readily understand. In order that the gaseous treatment may be fairly appreciated, it becomes necessary that a partial recapitulation of the treatment be here introduced. By reference, it will be seen that the boy had taken of castor oil, five ounces and a half; calomel, eighty-eight grains; jalap, twenty-four grains; rhubarb, twenty-four grains; and croton oil, sixteen drops, all of which proved totally ineffectual. In the successful treatment of this most fatal and alarming disease, I consider the pump syringe an indispensable implement, because more than double the amount of water can be thrown into the intestine with it than can possibly be introduced with the ordinary syringe. After having distended the bowels to their utmost capacity by warm water and the syringe, then, by the introduction of the acid and soda, you become possessed of another distending power, well nigh incalculable, not sufficient, however, to rupture the intestine, but amply calculated, in my humble opinion, to overcome any stricture or intussusception of this canal. The amount of carbonic acid gas evolved from forty grains of tartaric acid, and an equal portion of carbonate of soda, will occupy about the space of half a gallon, and when this gas evolves, acquires the temperature of the human body (and it should be retained in the intestine long enough for this to be effected), it will inevitably acquire double its bulk at the time of evolution."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 57.—*On a characteristic of the Urine in Rheumatism and Gout, with special reference to diathetic diagnosis.* By Dr. LAYCOCK, Professor of Medicine, Practical and Clinical, in the University of Edinburgh.

(*Edinburgh Medical Journal*, Aug., 1857.)

"If," says Dr. Laycock, "the urine, in a case of rheumatism or rheumatic gout, be allowed to stand in a glass vessel until it is cool, a mucous cloud will probably appear in it, containing small opaque, curdy-looking masses. This cloud presents varying appearances under the microscope, according to varying conditions of the patient; but there is one very constant appearance, namely, that of nucleated cells and nuclei or granules, which seem to constitute, in fact, the small opaque masses just mentioned. I have observed these

to occur so frequently in certain kinds of cases, that I have been led to consider them as characteristic of the urine in a rheumatic or gouty rheumatic condition of the system."

The microscopic characters of this mucous cloud are of three kinds :—

1. The principal characteristics observed are nucleated cells containing nuclei, varying in number, but when treated with acetic acid, presenting from two to four nuclei. They resemble the epithelium cells of the convoluted tubuli uriniferi.

2. Rounded masses of granules or nuclei, varying in appearance from an apparent agglomeration of nuclei to an imperfectly defined cell with many granules.

3. Free nuclei or granules.

These three products constitute almost exclusively the granular, small, curd-like masses which float here and there in the mucous cloud. Besides these, there are found in the cloudy deposit, in a greater or less number, epithelium cells from the bladder and urethra, and in women from the vagina, with (probably) their nuclei, and occasionally spermatozoa. Of course the urinary salts, especially amorphous masses of urates, are also to be found.

The same characteristic cloud, and the same characteristic cell and nuclei, Dr. Laycock says, were noticed in every *diathetically* rheumatic or arthritic patient admitted into the clinical wards of the Royal Edinburgh Infirmary during a three months period of observation, and he relates the cases, in number eleven. After this he proceeds as follows :—

"I do not propose to enter into any speculations as to the origin and nature of the urinary cell-deposit, which I have described in this paper as being so frequently associated with the diathetic disorders known as rheumatic and gouty affections. The most obvious, and, I think, the most probable theory is, that they are the epithelium-cells and nuclei of the convoluted tubuli uriniferi, given off rapidly and unhealthily, intermingled with similar products from the calyces, pelvis, and ureters. In other words, it is desquamation of these secreting surfaces, and probably will be found to usher in Bright's disease. Mr. Lowe, of Gainsborough, one of my clinical clerks, to whom I am much indebted for the attention he has paid to this matter, has examined the convoluted tubuli uriniferi of a sheep's kidney, and found similar cells and nuclei or granules. He is also of opinion that the nuclei may be the result of transformation of the epithelium cells from the bladder and ureter, and has figured a theoretical explanation of their formation. The main point is, that they occur with sufficient frequency in the urine of patients affected with acute or subacute inflammation of a diathetic character, so as to render them of clinical importance in that class of obscure cases in which the diathetic constitution is not easily determined. They may thus partly constitute a clue to the proper constitutional treatment of various constitutional diseases. It cannot be supposed that such an appearance of the urine, or such microscopic characters, have not been noticed by numerous observers; what I wish to impress upon the clinical observer is, their production in connection with a class of diathetic states, and of diseases associated with those states, as predisposing and determining causes. They have been noticed (as Dr. W. T. Gairdner remarked at the meeting of the Edinburgh Medical and Chirurgical Society, at which an abstract of this communication was read) in individuals who have had gonorrhœa long after all traces of the primary urethritis have disappeared. A remark of this kind cannot apply, however, to the case of the little girl with erythema nodosum. In all instances of that character (and some such have been detailed) the gonorrhœal inflammation should be looked upon as one of those locally exciting causes which, when they act upon the kidneys of persons diathetically disposed to gout and rheumatism, constitute remote causes of an attack. There is a large number of such locally exciting causes of imperfect renal action, and much of the success to be had in treating cases of gout depends upon a quick perception and a full appreciation of them. They may reach the kidneys through the nervous system, as when functional activity of the ovaria and testes affects their secreting function—as occurs in sexual excesses of the gouty man, and in ovarian hysteria, menstruation, etc., in the gouty woman; or

through the blood, as when things to be eliminated from it are directed to the kidneys—as in drinking excesses of the gouty man; or when repelled cutaneous excreta are thrown upon the kidneys—as in ‘taking cold,’ or when acrid irritants seek that outlet; or through a more manifestly local action, as from hard riding, damp, cold to the loins, gonorrhœa, &c. All these, and many similar circumstances, may occur without inducing diathetic diseases in persons not diathetically predisposed thereto, and there may be also a correspondent morbid condition of the urinary organs with its characteristic urinary phenomena; yet the fact should not invalidate the practical value of that diathetic diagnosis, which observations of the urine of diathetically predisposed patients may help to establish.

“I am satisfied, from considerable observation and experience, that in this direction of inquiry will be found the solution of many puzzling problems in the pathology and the treatment of disease. Once let it be granted (as it must be ultimately) that, in the rheumatic and gouty diatheses, the serous and sero-fibrous tissues are the seat of specific irritation, and where can we stop in the application of the principle? It is as applicable to numerous constitutional cutaneous diseases of a puzzling character, involving the sudoriparous glands and the connective tissue in which they are embedded, as to the well known and universally recognized diathetic affections of the joints. Urticaria, erythema in various forms, herpes, lichen, psoriasis, prurigo, are all often arthritic in their nature, and thus really analogous to various forms of masked and protean gout and rheumatism involving internal organs. It was long before the connection between articular rheumatism and pericarditis was discovered and admitted; but why should we not include other organs having a structure like the pericardium in the generalization? During the last winter I have taught that acute purpura, as it occurs in the robust and healthy, is in truth a diathetic disease, inasmuch as it occurs in persons of the rheumatic or gouty diathesis—often indeed ending in, or preceded by, articular rheumatism; and I have advanced reasons for the theory that the seat of the disease is in the fibrous coat and trabecule of the spleen—structures radically identical in their minute structure with the vascular tissues, especially of the heart and large vessels. In like manner, we may have diathetic arteritis (of which I have met with remarkable examples in practice) as well as diathetic endocarditis; nor should we exclude from the generalization tissues like the capsule of Glisson, the connective tissue and capsule of the kidney, the dura mater, both cerebral and spinal, the investing sheath of the great nerves, and of the canals along which they pass, and the like. As to all these tissues and organs, the experienced practitioner recognizes diathetic forms of disease often of a highly painful or dangerous character. Diathetic Bright’s disease, gouty neuritis (the most common form of which is diathetic sciatica), gouty inflammation of the spinal meninges, leading to intense neuralgia and hopeless paraplegia, and gouty inflammation of the dura mater and the arachnoid with its serious consequences, may be mentioned as illustrative of this doctrine.

“It is, then, mainly with the view of helping to lay the foundations of an exact diathetic pathology that I have brought these observations before the profession, being satisfied that such a pathology will lead to generalizations of the greatest value both to pathological research and the prevention and cure of disease. And I do this the more unreservedly, because these doctrines and this kind of research have been almost wholly neglected of late years; and because, in fact, the inductive method has never yet been applied to diathetic pathology and practice as has been done in other departments of practical medicine.”

ART. 58.—*On the relations of Bright’s Disease and Heart Disease.*

By DR. BAMBERGER, Professor of Medicine, Würzburg.

(*Archiv f. Pathol. Anat. u. Phys.*, xi. 1, 1857; and *Medico-Chir. Review*, Oct. 1857.)

The well-known frequency* of the complication of Bright’s disease and val-

* Willigk (“*Prager Vierteljahrschrift*,” Band xxxviii. p. 44) shows that in 209 cases of Bright’s disease, valvular disease was present in 31, or about 15 per cent. See also Chambers, “*Decennium Pathologicum*,” who establishes a much higher ratio.

valvular disease has been differently accounted for by different authors. An essential question regarding the etiology of the two classes of affections is, which of them precedes the other? Professor Bamberger states that, with the exception of a small number of cases in which, during the course of Bright's disease, endocarditis took place, he has never seen a case in which the renal affection was the first; whereas he has observed many in which morbus Brightii was developed during the existence of valvular disease. He therefore concludes that valvular disease is a frequent cause of Bright's disease, but admits that the latter, under these circumstances, frequently does not pass beyond the first stages.

The author next considers the relation of hypertrophy of the heart, unaccompanied by valvular affections, to Bright's disease. The ratio appears to be above 20 per cent. of the former; Dr. Bright himself estimated the frequency of cardiac hypertrophy at 23 per cent. Dr. Bamberger is of opinion that the mechanical explanation ordinarily offered, according to which the hypertrophy is produced by the physical influence of the derangement in the circulating fluid, is untenable. He admits that hypertrophy of the heart, in the majority of instances, is secondary to the renal affection; but he shows that it is found with large kidneys and contracted kidneys, and argues that a very different effect upon the momentum of the aortic current must be produced by each of these forms of renal disease. The Professor remarks, that if the obliteration of some renal capillaries could exert so palpable an influence upon the heart as that observed to accompany many cases of contracted and granular kidneys, the obliteration or application of a ligature to any larger artery ought to produce the same result. He points out that granular liver is analogous to granular kidney, and yet is not productive of cardiac hypertrophy.

In order to arrive at a solution of the question as to the efficient cause of the cardiac hypertrophy in these cases, he carefully tabulates and analyses 48 cases of Bright's diseases observed by himself during life, in which post-mortem examinations were made. In these 48 cases there were 25 in which there were marked alteration in the heart; in 15 there was either recent, or traces of former pericarditis; in 10, fatty degeneration; in 4, degeneration of the aorta; in 3, the remains of endocarditis. Hypertrophy and dilation of one or more cardiac divisions were met with 19 times. In 28 cases there was serious disease in the lungs; 11 times tubercle, 10 times pneumonia, pleurisy 9 times, emphysema 3 times; the spleen was enlarged in 24 cases; the liver was cirrhotised 3 times, in a state of adipose or bacony enlargement 16 times.

It is manifest that serious derangement occurs in most of the vital organs as a complication of Bright's disease. The author concludes that the hypertrophy of the heart is therefore not explicable on purely physical grounds; but that it must be regarded as a purely "vital phenomenon," belonging to the same category as so many other derangements of nutrition which are developed in the course of Bright's disease.

ART. 59.—*Two cases of Bright's Disease terminating favorably.*

By Professor NAUMANN, of Bonn.

(*Deutsche Klinik*, 14, 15, 1857; and *Schmidt's Jahrb.*, vol. xciv. No. 6, 1857.)

These cases are not related by Professor Naumann, but they are taken from a report of the hospital practice of that gentleman. Whether they are cases of Bright's disease, terminating favorably, may perhaps be doubted by persons of a sceptical disposition, but such evidence as we find in Schmidt's *Jahrbuch* we give.

CASE 1.—A dissipated woman, æt. 56, enjoying comparatively good health up to August, 1856, began to suffer from a general sense of faintness and debility, sweating easily, without appetite, having pain in both lumbar regions, which pain was increased by motion and pressure, and passing a small quantity of turbid urine. In the beginning of October, the breathing was somewhat hampered, and the feet had begun to swell. October 27th. The swelling in the feet more marked, and now accompanied by considerable œdema of the scrotum and effusion in the peritoneal cavity. The skin generally puffy, faded, and

dry. The lumbar more marked. Thirst troublesome; urine scanty, and containing, in considerable quantity, albumen, fatty matter, and epithelial tubes and cells. Exposure to cold and intemperance were the assigned causes of this mischief.

Digitalis and cream of tartar were given internally, with fomentations to the scrotum, and under this treatment, and occasional purging, the dropsical symptoms subsided in a very remarkable manner. Then, an infusion of *Conicera brachypoda* was tried, with the effect of producing marked diuresis, but not of diminishing the abnormal contents of the urine. In November, the œdema returned, extending to the upper extremities, when the patient becoming comatose, recourse was again had to diuretics—at this time to a vinous infusion of the tops of wormwood, juniper berries, and certain bitters. On the day following, the symptoms were all ameliorated, and in four days the patient was able to stand up and move about. Two months later, under a continuance of the same treatment, the dropsy had disappeared, and the albumen and other abnormal elements had vanished from the urine; and three months later still, this amendment still continued.

CASE 2.—A letter-carrier, formerly a goldsmith, æt. 41, became dropsical without any premonitory symptoms, and without obvious cause.

November 11th, 1856.—The whole body more or less œdematous; appetite and sleep good; no pain; urine scanty and turbid; skin very dry, heart and lungs sound; considerable effusion in the peritoneum; urine highly albuminous, but without casts. The appearance of the man was anæmic, and on this account iron was given along with the *Conicera brachypoda* together with purgatives and hot-air baths.

27th.—Dropsical symptoms greatly reduced, and very little albumen in the urine. With the exception of the anæmia, the patient seemed to be well.

28th.—Symptoms of acute Bright's disease have suddenly made their appearance—affection of the head, loss of appetite, continuous pain over the kidneys, and urine loaded with albumen, blood, and casts.

This condition was combated by nutrient measures, and in fourteen days the symptoms had disappeared, and, with the exception of a few casts, and a trifling amount of albumen in the urine, the patient was well. In March, 1857, this amendment continued.

ART. 60.—*Diabetic Sugar not the same as the sugar produced in the Liver in Health.* By Dr. OWEN REES, Physician to Guy's Hospital.

(*Lancet*, May 30, 1857.)

In one of the Croonian lectures recently delivered before the Royal College of Physicians of London, we meet with the following important remarks upon the peculiar sugar of diabetes, and the causes at work in its formation. "It is not my intention," says Dr. Rees, "to enter upon the etiology of diabetes mellitus further than to remind you that the views of M. Bernard have shown that the liver, contributing as it does, to the formation of sugar in the normal state of the organism, may be regarded, under certain diseased conditions, as the producer of the diabetic state. That in point of fact, according to Bernard, we have not now to determine how a substance, foreign to the healthy constitution of the blood, becomes engendered in the system, but merely to inquire into the causes producing, on the one hand, an over-activity in the sugar-forming action of the liver, or, on the other, the diminution of the destructive power apparently possessed by the blood in health over that sugar when it has mingled with the circulating fluid.

"Now all this is clear enough, were the sugar secreted by the liver, and that produced by injuring the base of the fourth ventricle, identical with that existing in the urine of true diabetes. This, however, is not the case, and we are not, therefore, so nearly about to unravel the difficulty as we might at first be inclined to believe.

"About two years ago I took the opportunity of obtaining blood from the hepatic veins of a dog, in order to determine the presence of sugar; for, like

many others, I was at first a little incredulous. By the assistance of my friend, Mr. Hilton, this was effected without much difficulty.

"On examining the blood obtained in this way, I found, it is true, that it yielded me sugar: but there was a peculiarity in the reaction of the tests, which led me to suspect I was not dealing with the same sugar as that contained in the urine of diabetes. It was quite impossible for me at the time to undertake a chemical investigation of the subject, and I was not sufficiently satisfied with my results to venture on publication. Some months ago I mentioned my suspicions to my friend, Dr. Pavy, who has thrown much light on this interesting subject, and he told me that the same doubt had occurred to him some time since, and he immediately showed me from his note-books that he had worked the question out very satisfactorily, though he had not published on the point. Having Dr. Pavy's permission to do so, I will now detail the results of his investigations. It appears that the principal points of difference between these sugars consists in the greater facility possessed by the hepatic sugar, and by the sugar of *artificial* diabetes, of undergoing destruction by contact with animal tissue. This has been shown by an experiment made on the sugar of *artificial* diabetes, comparing the result with that obtained by similarly treating grape sugar and *true* diabetic sugar. The experiments were conducted as follows: Three vessels were taken. In the first a quantity of pounded liver, obtained from a healthy dog, was placed with a solution of the urine of artificial diabetes; the specific gravity of the solution was 1045. In the second vessel was placed pounded liver with a solution of common grape sugar, of specific gravity 1040. In the third was placed pounded liver with a solution of extract of true diabetic urine, of specific gravity 1040. The pounded liver was used (as any other animal matter might have been) merely to induce changes in the elements of these saccharine principles by its presence. The three mixtures were now set aside for nine days. At the end of that time, on submitting them to examination by Barreswill's solution, it was found that the artificial diabetic sugar had entirely disappeared, while the reactions were obtained in all their completeness from the two other solutions. Experiments made with the same solutions, substituting blood for pounded liver, led to the same results, showing a power of resisting decomposition on the part of grape sugar and *true* diabetic sugar, far exceeding that existing in sugar obtained by the production of diabetes artificially.

There seems little doubt that the sugar of diabetes is a higher quality of the principle, and that it can preserve its atomic arrangement with far greater force than the hepatic variety. A power, however, seems to reside in the blood, which after *some length of time* eventually destroys, not only hepatic sugar and that of diabetes artificially produced, but even that of true diabetes mellitus. Thus Dr. Pavy's experiments show that if the blood taken from a diabetic be allowed to coagulate, and the serum then be separated from the crassamentum, we can detect scarcely any evidence from the latter after a very long exposure. In the serum, however, it can be detected in quantity till decomposition is thoroughly set in. For some considerable time both crassamentum and serum give full evidence, however, which contrasts strongly with the reaction of blood taken fresh from the right ventricle in health, and which contains *hepatic* sugar, for here the sugar disappears almost immediately the separation into serum and clot is completed. It is almost certain that when we produce the artificial diabetic state by operation, we obtain in the urine the hepatic sugar of the liver. It is also proved that this sugar of *artificial* diabetes is not the same as the sugar of *true* diabetes.

"Now, of course, were these sugars identical, we might consider true saccharine diabetes as a disease in which the sugar-forming property of the liver became abnormally active; or, on the other hand, a disease in which normal sugar was formed in the liver in usual quantity, but that the blood had lost the power of destroying it when so formed, and that it therefore appeared in the urine.

"The results I have detailed place us, however, in a very different position. *We know now that true diabetic sugar is destructible only with great difficulty, and that it is not the same as ordinary hepatic sugar.* The question will then

arise—Are we to regard the sugar of diabetic urine as a modification of that poured into the blood by the hepatic veins in health, or, on the other hand, as a product of disease bearing no relation whatever to the sugar of the liver?

"To those who have studied the subject of sugar in its chemical relations, who are acquainted with its varieties and the facility with which these are convertible into each other by the most simple processes, there will be no difficulty in believing that the sugar of diabetes may be easily derived from that produced in the liver in health. Late experimenters on the sugars obtained from the vegetable kingdom have shown how easily transmutations are thus effected, and chemical properties developed or abstracted by simple contact with materials apparently possessing anything but chemical activity. No one can fail to be struck, for instance, with the curious fact, that the sugar contained in fruits possesses a certain action on light, influencing polarization, which action is precisely reversed in the sugar obtained by crystallization from the very same source. Thus the gummy kind of sugar obtained from grapes possesses the property of *left-handed* circular polarization; but if we allow this sugar to lie exposed, a kind of imperfect crystallization occurs throughout the mass; and if we collect the granular crystals so formed, we find we have in these a sugar differing materially from that originally extracted from the fruit. Its chemical constitution is not the same. Its constitution is $C_{12}H_{22}O_{11}$, instead of $C_{12}H_{22}O_{12}$; and when examined optically, it is found to possess the property of *right-handed* circular polarization. The change appears to be effected here by some constituent of the vegetable juice exercising its influence as crystallization goes on; probably the acids play an important part. Now the liver, owing to some diseased action, may be supposed, in diabetes, to produce a sugar differing from that of health; a sugar which cannot be destroyed by the changes taking place naturally in the blood—changes rapidly affecting and destroying healthy hepatic sugar.

"The phenomena of diabetes mellitus are, then, not quite so simple as the experiments and discoveries of Bernard would at a first view make them appear; and we have yet to determine the causes in action for the formation of this abnormal sugar. Does the presence of a different ferment interfere, even as we observe catalysis productive of varying results out of the body; may not an analogous action be going on in the liver? and if so, what may be the nature of the ferment productive of disease, and whence is it derived? Are we to look to the portal blood for the ferment or controlling influence which forms this less destructible sugar? And is it owing to this diseased state of blood that the liver, even though unaffected, is unable to cause the changes occurring in health?

"But we need not have recourse to the theory of a ferment. The portal blood may present such principles to the liver as are only convertible into the *true diabetic sugar*. So far as we can yet determine, then, the whole phenomena of diabetic disease may eventually be traced to an abnormal state of the bile, gastric juice, and pancreatic secretion, any one or all of which may interfere with the formation of healthy products in the portal blood, and so overpower a healthy liver in the discharge of its office. Analogy would certainly, however, rather direct us to conclude that in diabetes the function of the liver becomes altered under the influence of some cause as yet unknown. Bernard has proved that the organ in health has a very strong transformative action on grape sugar; and so powerful is this, that we should almost be entitled to conclude, even in the event of the portal blood bringing diabetic sugar ready prepared into the hepatic circulation, that it would be metamorphosed by the liver into normal *hepatic* sugar before it could reach the cava through the hepatic veins.

"These results, then, taken together, render it probable that we are to look for the cause of diabetes mellitus in a disturbed state of the hepatic function, not in an increase of *natural* action, but in an action varying in *kind*. We see that in health the liver would reduce proximate animal principles to a normal hepatic sugar, and in the perversion of force occurring in diabetes mellitus, we have a product given us approaching in character, it is true, to the normal sugar, but by no means identical with it. There is great facility for theorizing

with respect to the agencies in operation in effecting this change of action. As vegetable juices contain principles which, by simple contact, can alter the chemical and optical qualities of the sugar first generated in the fruit, how easy to believe that the elaborate fluids contained in the several parts of the circulatory system of the liver may do the same. We know that acids are active in the vegetable kingdom; we know that the liver-substance is acid;—may not an over acid state cause the production of this abnormal sugar? or may not even a too slow circulation through the organ (by allowing too long contact with acid matter) bring about disease? These are questions requiring much consideration.’

ART. 61.—*On Movable Kidneys.* By Prof. OPPOLZER.

(*Wien Wochenschrift*, Bd. 42, 1856; and *Med. Times and Gazette*, June 6, 1857.)

The knowledge of the possibility of the existence of this affection is of importance to the practitioner, as without it he may suppose the appearances observed to result from various other causes, and submit the patient to an injurious course of treatment, or give rise to unnecessary alarm on his part. The abnormal movability usually affects but one kidney, and especially the right one; but the author has met with cases in which it was observable in both, and that in a remarkable degree. In all the cases he had the opportunity of examining, the patients dying of some other disease, the kidneys were found healthy; but in these cases there has been observable a deficiency in the cushion of fat, and an extension of the renal vessels. In some cases the practitioner's attention has been drawn to the abnormality by the patient observing a tumor on one or both sides of the abdomen, which only became perceptible while standing, or lying on one or the other side, disappearing again during the horizontal posture. Generally speaking, however, it is first discovered by careful exploration, when, beneath the relaxed, painless, and not very obese abdominal parietes, a largish, rounded tumor is perceived deep under the liver or stomach. The inner concave side can only be felt in very thin persons, and the upper end is only accessible in some. The tumor can easily be pushed upwards, and then may suddenly disappear, but it cannot be pressed against the spinal column, or downwards below the crista ili, without great pain being produced. To very firm pressure, made in any direction, the tumor is sensible; and the patient spontaneously complains of a sense of pressure and dragging, especially when standing, performing active movements, during defecation, &c. In the cases seen by the author, the condition of the urine has been normal.

The affection is usually congenital, as is shown by the lengthened condition of the vessels. Rapid emaciation occurring in persons formerly fat, concussion of the body, as in rough travelling, constipation, &c., may probably contribute to its production. In fat persons the diagnosis may be impossible, but it is not difficult in those who are thin, as the form of the swelling can be traced, while the tumor can be pushed into the lumbar region, and there felt. The pain which it not unfrequently gives rise to cannot be mistaken for neuralgia, colic, or rheumatism, if the practitioner will only make an exact exploration; while the tumor resulting from a collection of the feces assumes another form, and does not appear in, nor disappear from the lumbar region in consequence of pressure. It may also be distinguished from a movable spleen, as the latter lies in front of the intestines under the parietes, and gives rise to dulness on percussion, which the kidney does not. It can only be confounded with cancerous and tubercular masses, when these are movable, and resemble the kidney in form. Treatment of this affection by bandages, and the like, is of no avail; and the removal of pain when present must chiefly be sought from the horizontal posture. Confinement of the bowels, and the consequent straining, must be avoided. It is, however, of great importance to be able to tranquillize the mind of the patient as to the nature of the affection, and to prevent injurious measures being adopted; and hence the value of a correct diagnosis.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 62.—*Case of bronzed Skin and Cirrhosis of the Liver.* By Dr. CHARLES FRICKE, of Baltimore.

(*North American Medico-Chirurgical Review*, July, 1857.)

CASE.—Michael B—, white, born in Ireland, æt. 25, five feet five inches high, moderately fleshy, and whose previous occupation was a laborer in one of the lower counties of the State, was admitted to the prison in April, 1856. He admitted that he drank occasionally, but denied being intemperate, and his health, excepting occasional attacks of malarious fever, had been good. Nothing particular was remarked about his appearance, but his hands. These were fully one-third larger than usual, evidently from hypertrophy of the skin, which, along with the fingers, was disposed somewhat in folds, and which appearance I concluded to be due to elephantiasis. He was put to medium work, and attracted no attention from me, until the 1st of September following. I found then that he had failed in strength; that he complained of nausea, and distension about the epigastric region, the latter due to gas; more or less headache and constipation, but no fever. A few days' rest served in a measure to relieve this condition, and he returned to work. At the end of the month he again entered the hospital with the same symptoms, but accompanied with jaundice and a sense of weight rather than pain over the liver. He was ordered taraxacum and blue mass, and in a few days was again relieved. This recurred from time to time until the middle of December, when he became a permanent inmate of the hospital. The jaundice was now universal; pulse 80, and of ordinary volume; no perceptible enlargement of liver; lungs and heart sound; digestive function good; emaciation moderate; and urine high colored. His principal complaint was of lassitude and an uneasy sensation in the head. As the case progressed, the principal phenomena exhibited were dropsy, hemorrhage, black urine, and bronzed skin. The first of these, dropsy, appeared in the form of ascites, about the middle of February, and had attained a very considerable size at the time of his death, but the abdominal veins were never much enlarged; and during the last few weeks, his legs became œdematous. The first hemorrhage occurred on the 14th of April, from the intestinal canal, as well as from the lungs and stomach. The whole amounted to nearly a quart. These recurred three or four times during the succeeding two weeks. I first remarked the black urine in March. It continued till his death. The average amount was thirty ounces, and sp. gr. 1.020. By direct light this fluid resembled bile, but by transmitted light, was of a deep purple hue. It contained no very great excess of bile, and the change was found to be due to an enormous amount of the coloring matter, termed by Heller *urrrhodin*. The fecal discharges for the last six months were hard, rounded, and white balls, somewhat resembling that of dogs.

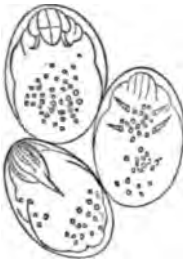
The bronzed skin, the most interesting phenomenon, and the one to which I wish to direct attention more particularly, was first remarked in January. At the commencement it was not well defined, nor more decided than is often observed in cases of cirrhotic liver, but after a time the tinge became so deep as to attract decided attention. It was limited to the forehead, face, and neck, and almost as deep in hue as is formed in the livers of remittent fever patients. One fact is worthy of notice. The demarcation between this color and that of the rest of the body was not clearly defined, but they merged into each other by degrees. He died April 29, 1857, after a convulsion.

The autopsy was made by Dr. Johnson and myself, seven hours after death. Bronze hue not so well marked; jaundice universal and of a deep lemon tint; emaciation moderate; and legs œdematous. Head and chest not examined. The abdominal cavity contained about one gallon of serous fluid, and the intestinal canal was filled with dark liquid blood. Kidneys congested and somewhat enlarged, otherwise healthy. Suprarenal capsules of normal size, hue, and consistence; no alteration whatever observable. The liver, one-third smaller than usual, was of a bronze hue externally. Everywhere its surface

was irregular, and in some places nodulated, particularly the left lobe. Internally the fibrous texture was abnormally developed, and the outlines of the lobules clearly defined. The cut surface, but not the exterior of the organ, was uniformly of a light apple or pea-green color. Under the microscope, nothing was perceptible but the hypertrophied fibrous tissue and the cells filled with the same coloring matter. The gall-bladder contained about half an ounce of light-green bile. Although various shades are spoken of by different pathologists, I can find in no work this peculiar color of the liver alluded to.

ART. 63.—*On the diagnosis of the Scabies by the presence of the Ova of the Acarus amongst the scales of the Epidermis.* By Dr. GULL, Assistant-Physician to Guy's Hospital.

(*Lancet*, July 4, 1857.)



Ova of *Acarus Scabiei* $\frac{1}{100}$ of an inch in long diameter.

Scabies often presents such difficulties in diagnosis by the eye only, that every additional microscopic aid is valuable. It is admitted not to be always an easy task to find the acarus itself; but each animal (female) lays many ova, which are readily found attached to the roughened and undermined cuticle in the neighborhood of the vesicles. These ova are well known, but their presence as a diagnostic test of itch has been overlooked; they are about $\frac{1}{100}$ of an inch in their long diameter, and in many instances the foetal acarus can be seen within the shell.

ART. 64.—*Contributions to the theory of Epiphytes.* By Dr. EDWARD KOCH, of Würzburg.

(*Virchow's Archiv*, Bd. x., 1856; and *Dublin Quarterly Journal of Medicine*, May, 1857.)

"It was pardonable that investigators who had never succeeded in discovering fungi in mentagra should deny their occurrence or their pathognomonic signification in this disease; it is, on the other hand, surprising that the fungus in favus should at the present day be considered as an *accidental* product of albuminous transudations (Didot), and, accordingly, as unessential to that affection.

"The general condition necessary to the growth of fungi on the human body is their transference from without to such parts as present the conditions essential to their development. Gudden has very well described the circumstances favorable to the growth of fungi on the integuments; but he has, it seems to me, omitted a very important element in the causation of the origin and spread of pityriasis versicolor, namely, morbidly increased secretion of the perspiration, coexisting with a neglected state of the skin. That this cause of the development of pityriasis is very active with respect to the fungi on which it depends, is evident, first of all, from its frequent occurrence in phthisical subjects convalescent from typhus, and, in general, in patients affected with permanently or temporarily increased cutaneous secretion, in whom either from carelessness or from caution, bathing or washing of the skin is omitted.

"Thus Dr. Koch remembers some patients of this description who were covered literally from head to foot with scales of pityriasis, but in whom he, unfortunately, did not employ microscopic examination, and can therefore not answer for the existence of fungi in their cases, nor can he insist on the existence of the latter in *all* cases of pityriasis after typhus, as he has convinced himself of their presence in only five or six such convalescents. The parts of the body most liable to circumscribed pityriasis might be adduced as a further confirmation of this view. Thus, it is particularly apt to attack the trunk, which is much more easily and frequently the seat of increased perspiration

than the extremities; and if we examine more closely, we shall find that the parts most inclined to perspiration, from the neck down to between the scapulae, the spaces above and beneath the clavicle, the axillae, particularly the parts about their anterior portion, are most frequently and intensely attacked. In the latter situation, as well as between the breasts, he has very frequently observed it in women. He cannot give a general assent to Gudden's statement, that pityriasis versicolor in particular is of so very rare occurrence in women. This opinion may have arisen from the greater reluctance of women, for many reasons, to consult the practitioner for a few such spots, and also from the less chance of the accidental discovery in them, during medical examinations of other kinds, of the existence of such an affection, in consequence of their unwillingness, without absolute necessity, to expose the parts just mentioned. But if the physician is more frequently compelled to make such examinations in an hospital for syphilitic or cutaneous affection in the female, he will very soon be convinced that pityriasis occurs perhaps as frequently in women as in men. In children, on the contrary, it is certainly very rare; in the latter, profuse perspiration occurs less frequently, and more attention is generally paid by adults to the cleanliness of their skin, than grown people are wont to bestow upon themselves. Gudden further quotes the case of a man who was in the habit of leaving his chest exposed, and in whom the middle part of it remained free from pityriasis, certainly only because it was less liable to profuse perspiration, and because the latter was immediately dried by the access of air.

"In pityriasis the fungi grow chiefly in the external horny layers of epidermis; in favus, on the contrary, they are developed in the hair follicles, where they increase to form great scabby conglomerate masses, the so-called individual favi (*Favus Individuen*). Leaving out of consideration that we have here to do with two different species of fungus, a strict separation of the two forms, as essentially distinct affections of the skin, is certainly justified even by the external microscopic phenomena. For the same reasons, as little can identity be maintained between favus and herpes tonsurans, or between pityriasis and the mentagrophyt described by Gruby.

"Thus, in herpes tonsurans, the fungus is situated almost exclusively in the hairs and in their fibrous substance; at least, Dr. Koch was enabled, in almost all the hairs he examined, to establish the freedom of the medullary substance from the affection. In the fine whitish scales of epidermis surrounding the diseased hairs, he has, on the closest examination, but very rarely found some few sporules, but never could discover such great masses as Hebra and Bärensprung mention. These small quantities of sporules must have been derived from the bursting and breaking of the hairs filled with them into the adjoining layers of epidermis. But even should Bärensprung's assumption be correct, that the growth of the fungi begins in the epidermis, and finds its way thence into the hairs, it is still in the hairs that the process, in this form, is to be considered as predominant and essential. If, on the other hand, in favus, hairs are found, here and there, containing fungi, this is certainly so rare as to be considered an incidental occurrence; while, in this case, the formation of the scabby fungous convolution around the hairs—whether isolated or confluent is indifferent—is to be considered as characteristic.

"The arrangement of the fungi in the hair, in herpes tonsurans, Dr. Koch has, in general, found to be such as Malmsten and Bärensprung have described. They lie as garland-like, undivided strings of sporules between the fibres of the cortical substance, leaving the medullary portion intact. The hairs are broken off very short, so that, when pulled out, they are only a few lines long; they have a dirty-white color, and are swollen, thicker than the unaffected hairs, and very brittle.

"Both the upper and under (radical) extremities of these stumps of hair are, in general, splintering and broom-like, and the strings of fungi extend from the middle portion out between the splinters of the two extremities, so that it is hard to determine whether the fungi grow out from the root, or whether—as Bärensprung considers to be possible—they grow, after the fracture of the hair, through the fractured end into the fibrous substance. Dr. Koch would be inclined to look upon the former as the more probable, namely, that the fungus

is developed in the root-sheath, and that it penetrates thence into the upper part of the hair. The growing in of the fungi from the top of the hair would indeed be proved, if Küchenmeister's statement were correct, viz., that, first of all, a round heap of sporules forms in the root of the hair. But he looks upon this as impossible, since, in every diseased hair of the kind, the top breaks off in extraction; besides, it is more than improbable that a growth of fungi could arise in the centre of the root, without transference from without. Opposed to Bürensprung's view, that the fungus reaches the hair also through the upper fractured extremity, and grows thence downwards, it is yet the fact, that such hairs have never been found having their upper end filled with fungi, and their lower part still free therefrom; not to mention that, were such a process going on, the fungi should be found more abundantly in the epidermis than is really the case.

"Dr. Koch has not as yet had an opportunity of observing the *Microsporon Andonini*. On the other hand, he has, in two cases of mentagra, succeeded in discovering the *Microsporon mentagraphytes*, and on both occasions as a dense layer of little round sporules situated between the roots of the hairs and their sheath, its limits superiorly coinciding exactly with those of the hair follicle. Fungoid filaments he has as yet not seen in this form of disease.

"If we now consider once more the situation of the fungus in the four forms spoken of, viz., Pityriasis, Favus, *Herpes tonsurans*, and Mentagra, we find it to be in Pityriasis in the external layers of epidermis, leaving the hairs and their sheaths free; in favus in the hair follicle, leaving the lower parts of root-sheaths always (Gudden), and the inner part of the hair most frequently, free; in *Herpes tonsurans*, in the fibrous substance of the hair, with but slight implication of the scales of epidermis surrounding the hair; in mentagra, in the inner root-sheath of the hair, leaving the hair, the hair follicle, and the surrounding epidermis, free.

"Did we now assume that some of these forms of disease depend on the same species of fungus, which, however, is not the case, this constant difference of the tissue attacked should warn us to discriminate between the diseases in question. Gudden, on the other hand, correctly maintains that all varieties of favus are formed of one and the same species of fungus, and are only determined by the greater or less reaction of the cutis against the intruder, and by the degree of growth of the latter. This is not true of favus alone; it is equally so of all the forms mentioned. It is accordingly a matter of indifference, with respect to determining the nature of the disease, whether we find the crusts of favus on a dry part of the skin or on one affected with eczema, or meet them bathed in pus, the favus crust is distinctive. It was certainly a useless and superfluous dispute which was carried on, whether *Herpes tonsurans* commences with eczematous or herpetic vesicles, with papillæ or pustules; the *Trichophyton tonsurans* in the hairs is the essential point, and according to the degree and duration of its growth and the sensibility of the skin in the part affected will the case be attended with simple exfoliation of the epidermis, the formation of smaller or lesser vesicles, pustules, or even abscess.

"It is further equally self-evident that, according to the different seat of lodgment of the fungus, the reaction of the skin in each form will in general vary. Thus we find in pityriasis, where it is superficially situated, for the most part no reaction of the skin, and a slight redness only when the process is very intense, or the skin tender. In favus, in which the fungus begins to grow in the hair follicle, a small yellow vesicle first forms around the latter, and soon dries; under the gradually increasing crust the cutis atrophies; if the scabs increase very much, or coalesce to form extensive crusts, the irritation excited is of course greater, and the more so as washing is very much impeded, and consequently superficial suppuration easily takes place under the crusts, though in most cases without considerable swelling of the skin. Wholly isolated crusts of favus may, if the atrophy of the cutis is once accomplished, exist a long time without any reaction of the surrounding parts. Thus, Dr. Koch once found, on the lower part of the left thigh of a girl suffering from constitutional syphilis, two isolated scabs, of the size of a six-kreuser piece (equal in size to our penny), of a dirty-yellow color, round, and smooth on

the surface. He at first thought they were the scabs of dried pustules, but they separated, and he was surprised not to see the least redness of the surrounding parts, and the patient asserted that she had had them more than a year. They were convex inferiorly, and the corresponding cutis was atrophied. On the upper surface was a small central, bowl-shaped depression, leading to a fine little aperture perforating the entire crust. Microscopic examination showed them to be crusts of favus. The patient stated that she never had favus on her head.

"Now, in mentagra, where the fungus penetrates to the deepest parts of the root-sheath, leaving the follicle free, we see the cutis first swell, producing node-like tumors, while a continuance of the affection gives rise to burrowing abscesses, with the subsequent formation of crusts. Thus he has in one case removed undermined crusts of the size of a half-florin piece, and from two to three lines in thickness, the numerous hair follicles projecting far, bathed in pus, on their under surface. The nature and situation of the fungus are best studied on hair follicles removed in this manner.

"Finally, in the last patient affected with favus whom he had an opportunity of examining, invariably he found in all the scabs peculiar bodies of a light green color, and for the most part of a regular round shape, about double the size of the sporule cells, and consisting of a membrane in general containing from one to four smaller granules, apparently of a darker shade of green. He does not remember to have seen these bodies mentioned in any description of favus, nor had he himself observed them in his earlier investigation of such scabs; consequently he cannot pledge himself that they are a constant constituent of the scabs in favus. However, it struck him as remarkable that in this one patient he found them in tolerably large numbers mixed with the fungi, and especially where the filaments were most crowded. In order to guard against the possibility of deception from the accidental conveyance of foreign bodies to the surface of the scabs, he cut several of the latter obliquely through the centre, and shaved off small portions from the innermost part; but in the objects thus obtained he still found the green globules above described in numbers equally great. He does not venture to draw any conclusion from this observation of a single case; but he is inclined to believe that the chlorophyll bodies in question could not accidentally have got into the scabs."

ART. 65.—*On the existence of Herpes in Domestic Animals, and its communication to Man.* By Dr. VON BARENSPRUNG.

(*Annalen des Charité-Krankenh.*, Achter Jahrg., Heft i.; and *Med.-Chir. Review*, July, 1857.)

The author quotes numerous writers who have directed attention to the occurrence in animals of cutaneous eruptions similar to those found in man. Alibert has remarked the occurrence of herpes circinnatus in horses; Dr. Fehr has observed a peculiar herpetic eruption in Switzerland communicated from cattle to human beings; similar observations are quoted from Hering's *Repertorium der Thierheilkunde*, Band i., 1840; from Gurlt and Hertwig's *"Magazin für die Gesammte Thierheilkunde,"* Band vii., 1841; Letenneur's *"Réflexions sur l'Herpès Tonsurant,"* 1852; and other works. From his previous investigations into the nature of herpes in man, Dr. Von Bärensprung assumed that the eruption in question was characterized in animals as well, by the formation of a confervoid growth. In them it resembles the herpes tonsurans of man; circular, well-defined spots form, upon which the hairs are partly broken off, partly fallen out, and invested with a white asbestine scurf; the subjacent surface is red, and covered with papule. These spots occur in all parts of the body, but especially in those which the animal is unable to reach with its tongue. Each hair is enveloped at its base with a thin whitish sheath, a prolongation of the sheath of the root of the hair, which commonly ceases at the point at which the hair issues from the cutis. This occurrence is due to a cryptogamic vegetation, which glues the sheath to the hair; this consists in sporules and filaments; the former are circular or angular, and

without granular contents; the latter are elongated, branched, and jointed. The characters are the same as those found in herpes as contradistinguished from tinea and chloasmi; but the cryptogamæ are found not so much, as in man, in the hairs themselves, as between the hair and the sheath. Dr. Von Bürensprung rubbed some scales containing much of the confervoid growth on his left forearm. For some days no effect was produced, but after a time considerable itching reminded him of the experiment, and to his surprise he found a well-formed spot of herpes circinnatus of the size of a sixpence. This gradually increased, and in three weeks attained to the size of a crown-piece. In the fourth week the first spot began to heal, but others formed in the vicinity, and the author now arrested them by the application of white precipitate ointment.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING TUMORS.

ART. 66.—*Comparison of the Mode of inserting Caustics by Incisions, with other modes of applying caustics in the treatment of Cancer.* By the Surgeons of the Middlesex Hospital.

(*Report of the Surgeons of the Middlesex Hospital on Dr. Fell's Mode of Treating Cancer.* Churchill, 12mo., pp. 114, 1857.)

The mode of introducing caustics by incisions, frequently repeated, with a view to effect the gradual destruction of a cancerous growth, would appear to have originated with Dr. Fell, but it is curious to find how, towards the end of the last century, he was anticipated by Mr. Justamond, Surgeon to the Westminster Hospital (1780). Thus, in an "Account of the method pursued in the treatment of Cancers and Scirrhus Disorders, and other indurations," we find that the practice of this surgeon was to make scarifications in the eschar, and fill them with a caustic application; but at the same time we do not find that this practice was repeated daily for weeks, with a view to the gradual destruction of the cancerous growth. The merit, then, of applying caustics by incision, if it be a merit, must be ascribed to Dr. Fell, and this is his only merit, for the new ingredient of his caustic—*Sanguinaria canadensis*—is evidently no more than a handle for quackery.

"It cannot fail," say the reporters, "to strike those who uninterruptedly watch cases subjected to the mode of applying caustics by incisions, that, in several particulars, their progress and results are all but identical with what is observed in the ordinary employment of caustics. The morbid growth is in both converted into an eschar. The eschar is thrown off by the action of the living parts. The healthy structures appear little prone to resent the caustic applications, however made; and inflammation, abscess, erysipelas and purulent infection are all but unknown consequences of their use. For like reasons in both methods there is no hemorrhage. The effect upon the local cancerous disease, which follows the introduction of the paste by gradual incisions, is in its very varieties precisely that attending the ordinary use of caustics. There has been in some of our cases the same aggravation of disease as followed the caustic treatment of Dr. Landolfi. There has been in others the same beneficial effect upon the secondary disease of glands, which is often seen to follow the removal of a primary tumor by the ordinary use of caustics.

"But there are these differences. The pain attending Dr. Fell's plan is decidedly less. The proportion of the escharotic in his paste is greater than that in other caustics composed of the chloride of zinc, *e. g.*, in Dr. Canquoin's preparation. The chloride is mixed with a new ingredient. Lastly, the paste is introduced in a different manner.

"With respect to the comparative *pain*, we may at once state that of the many cases which have been under our care in the past six months, there has not been one in which any of us would have resorted to the ordinary use of caustics for the extirpation of the local disease, so dreadful is the suffering attending their use. By the invention of the method of introducing caustics by gradual incision, a very important advantage is gained: it admits to the

benefit of treatment an entirely new class of those who suffer from cancer—a class hitherto almost universally abandoned, at least in England—we mean, patients precluded, by the judgment of the surgeon, or it may be by their own choice, from the use alike of the knife or of ordinary caustics. In the cases now reported on, the majority of the patients were of that class, and in none was the value of the treatment more conspicuous. The average of pain was in these very patients the least; and nothing could be more striking than the contrast between the distressed condition of such patients before they were treated, and their comparative ease afterwards; healing sores or temporary scars taking the place of fetid, tender, discharging, and constantly growing masses of cancer. Every such patient restored to comfort, and with life prolonged, is a witness to the value of this treatment; and we cannot but esteem him happy who could thus suggest and adapt to practice a method by which life and ease are extended to many persons previously without hope of either. That there are still cases so virulent in their malignant character, or so far advanced towards a fatal termination, as to be beyond all help, does not detract from its merit. This plan of treatment is a clear advance upon the past, and may not only be itself improved, but may be the way to more extended blessings upon a class of the community now signally distressed.

"The time occupied in the complete extirpation of a tumor by the incisions, is generally longer than when caustics are used in the ordinary way. We are not, however, prepared to say that there is any further disadvantage in this than the mere fact of delay; or that the probability of increasing local cancerous action is greater by the milder and more continuous application of the chloride. The recorded results of the very slow process of treatment peculiar to Mr. Justamond, and of the practice of employing as a caustic Burnett's disinfecting fluid, would incline us to think that there is rather an advantage than a disadvantage, in a very slow destruction of cancerous tumors.

"*Sanguinaria*.—The presence of a new ingredient in this caustic paste would seem to call for an inquiry into its nature and its mode of action in cases of cancer. We have, accordingly, endeavored to ascertain the value of *sanguinaria*, employed alone, as a topical application, and our knowledge of its efficacy is expressed in the following facts:—

"Applied in a decoction of the same strength as that used in making the paste, it showed no power whatever of altering the appearance of healing sores on the leg. It neither repressed the granulations, when they were exuberant, nor impeded the formation of those which were healthy. On the contrary, sores granulated and cicatrized under it, as they might have done if treated with water-dressing; and granulations formed, and rose above the level of the edge of the sore, in spite of the alleged power of the root to destroy fungous growths.

"Applied in powder, daily and freely, upon a sore on the leg covered with large granulations, and rising considerably above the surrounding surface, it did not, in a week, at all lower the level of the sore, but the granulations covering it became small and healthy. The patient was a young man, just admitted into the hospital, and was kept in bed during the treatment.

"In Case 50, the effect of the *sanguinaria* decoction upon cancer was contrasted with that of the chloride of zinc in the same patient, and it was found that the diseased tissues shelved off in somewhat larger flakes, with greater frequency, and with more pain, under the use of the *sanguinaria*. The two fluids appeared to have equal power in correcting the fetor of the morbid parts.

"Its effect in the case of a very large ulcerated cancer of the breast, to which it was applied in powder for the period of a fortnight, was to destroy the vascularity of the surface of the sore, and change its appearance into that of whitish non-vascular lymph, to diminish considerably the quantity of discharge, the consequent fetor, and the pain. Upon employing for ten days subsequently, a lotion of conium and opium, without the *sanguinaria* powder, the fetor returned, and some of the discharge; but there occurred no appreciable alteration in the character of the ulcerated surface.

"In a case of very large encephaloid tumor, with deeply excavated ulcers, formed on the left os innominatum of a middle-aged female, the decoction of

sanguinaria was employed with the effect, not only of diminishing the quantity of discharge, which had previously been profuse, but of removing the offensive odor and cleansing the surface.

"Further than this, we have made no inquiry into the powers of the sanguinaria as a topical remedy. For the purpose of destroying cancers it appears to be practically inert. Such effects as those described would probably be produced by many other woods employed in the form of powder. The metallic is confessedly the efficacious part of the paste; since Dr. Fell himself, finding that 'months of continued application of the sanguinaria were requisite to remove a tumor by its means,' abandoned it as a solitary remedy for that purpose, though he retained it for some specific control which he supposed it to have over cancerous matter and action. It will also be gathered from what we have said, when comparing the action of the paste with that of caustics in general, that we attribute none of the power of the former to an agent so feeble in its action as the sanguinaria.

"*Incisions.*—The last peculiarity of this treatment is the practice of incisions; and we are of opinion that this is its only, but its very great merit. The sanguinaria is inert; the chloride of zinc paste was known before; but the incisions constitute a new feature in the treatment of cancerous tumors, for which we find no parallel in the writings of the past, or in the practice of present surgeons. Cancer, in its constitutional nature, remains as ruthless and as unassailable as ever. Chloride of zinc may, or may not, continue to be used for the destruction of local disease. But the advantage placed in the hands of surgeons by the invention of gradual incisions, claims henceforth their very frequent adoption in the treatment of cancerous tumors, as well as a grateful acknowledgment of the ingenuity of their inventor."

ART. 67.—*On Cancer Curers.* By Mr. SPENCER WELLS, Surgeon to the Samaritan Hospital, &c.

(*Medical Times and Gazette*, July 11, 1857.)

The following remarks are taken from an admirable lecture on the treatment of cancer, which may be read from beginning to end with much advantage by those who wish to acquire sensible ideas on this subject. It is very interesting to see how recent doings have been anticipated, and how even the scoring the eschar, as practised by Dr. Fell, is not altogether a new idea.

"It is curious to remark how imitative even great discoverers may be. The escharotic effects of arsenic had been known to the Greek and Roman physicians—they had not been forgotten in the middle ages. The mineral had been used for centuries in the removal of cancerous diseases. Plunket adds some crow's foot and dog fennel to it, and becomes a great cancer-curer in London in the early part of last century. The chloride of zinc is proved to be an excellent caustic by Hancke, Canquoin, Alexander Ure, and others. They even use it to remove malignant growths. Dr. Fell adds some *Sanguinaria canadensis* to it, and four gentlemen of the very highest character and professional position, expressing no disapproval of the use of a secret remedy, and without trial of the unaided powers of the vegetable, publish a certificate on Dr. Fell's 'mode of treatment,' complimenting it as 'ingenious, safe, and easy of application.'

"It was Guy's caustic, or rather the Plunket's paste, that killed Lord Bolingbroke, and many others were poisoned by the local use of arsenic; yet this did not prevent Lord Arundel from buying the receipt of the wife of a blacksmith, so ignorant that she could not sign her name, but a noted cancer-curer, named Elizabeth Fellow. This was long known as Lord Arundel's Cancer Cure. It was an arsenical powder, and a wash of corrosive sublimate, and no doubt killed a great number of poor women. However, like Plunket's paste, a great many cancerous and other tumors were removed entire by it; and Mr. Justamond, who was surgeon to the Westminster Hospital some seventy or eighty years ago, tried them both very extensively, arriving at the conclusion that the advantage gained did not compensate for the risk incurred. It is curious to find how Mr. Justamond anticipated much that has been going on in London

during the last three or four years by cancer-curers, and it may be worth while to read to you rather a long extract from a pamphlet he published in 1780, giving an account of his experiments.

"After describing various methods he had used without success, he mentions a case in which he resolved to attempt extirpation by the arsenical caustic. 'My patient was extremely timorous, and would by no means be persuaded to submit to the operation by the knife. She had a very hard stubborn scirrhus in the right breast, just above the nipple, of the size of a small apple, and beyond this, a small indurated gland under the axilla. The arsenical preparation I used in this case was composed of one-third of antimony and two-thirds of white arsenic fused together. This being reduced into impalpable powder, a few grains of it were mixed with as much powdered opium. But as the skin was entire, and as I knew the arsenic would not act through the cuticle, the day before this powder was applied I rubbed the whole surface of the gland gently with the lunar caustic. By this contrivance the cuticle was easily separated next day, when mixing a small quantity of the powder with part of the yolk of an egg, so as to bring it to the consistence of an ointment, I spread this upon a pledget, cut to the size of the gland, and applied it to the whole surface. The pain was very great for the first four-and-twenty hours, but after that subsided. I left this first dressing on for several days, when seeing it ready to drop off, I removed it, and found that all that part of the skin on which the caustic had been applied was cracking all round, and the tumor beginning to separate. In expectation of facilitating this separation, I made a few scarifications on the destroyed surface, and filled the crevices with more of the powder, applying over it a pledget of the same kind as the former. But this second application did not, as I imagine, produce any effect, for it caused no pain. I then waited a few days to observe what would happen. The separation began to take place more evidently at the edges, which now looked florid, though the tumor did not yet seem ready to come away. To hasten this event, I judged it proper to put some of the powder all round the separating edges, and as low down as it could be insinuated between the diseased gland and the sound skin. I soon found that this contrivance had its effect, for the pain it occasioned was more violent than that produced by the first dressing. I was, however, obliged to repeat the application of the powder to different parts of the edges at intervals, but never in so large a quantity as before. By this method the separation of the tumor was effected in little more than two months, and the gland came out as entire as a nut out of a shell, or as if it had been cleanly dissected with a knife. The small gland under the armpit I had put nothing to, thinking it would dissolve by the suppuration of the larger one, but in this I was mistaken. It still remained, but this circumstance did not prevent the wound made by the separation of the larger gland from healing very fast after it had come out.' Mr. Justamond says he saw this patient a year and a half afterwards in perfect health. He explains the separation of the diseased gland from the surrounding parts by the action of the arsenic on the sound skin when deprived of its cuticle, 'bringing on inflammation and suppuration in the cellular membrane all around and underneath the diseased gland, which is thus forced out entire, and unaffected by the caustic;' and he adds, that if any one wishes to separate the whole gland at once, 'he must extend the application all over the indurated part, after having deprived the surrounding skin of its cuticle, either by a blister, or by the method made use of by me in the above instance, which I think preferable, as being less irritating. Perhaps it may hereafter be found only necessary to make a circle round the whole tumor for the application of the arsenical caustic.'

"So you see the modern cancer-curers have not taught us anything new. They have not taught us how to remove cancer by caustics. They have not taught us to discard arsenic. We had done that long ago, except in those cases of small superficial malignant ulceration, in which, in a dilute form, it is still the best remedy known. They have not given us any new caustic, and it remains to be seen whether they can show that their caustics, as prepared and used by themselves, have any advantage over the knife. To settle this ques-

tion we cannot do better than examine the results of the cases of Landolfi, Pattison, and Fell; as recorded by themselves.

"Landolfi, a Neapolitan physician, may be looked upon as the prince of the cancer-curers. He has been decorated with orders of knighthood by sovereign princes, has been alternately flattered and abused, and has made an immense fortune. He made no secret of his plan. 'Landolfi's paste,' as his caustic was called, was composed of equal parts of the chlorides of zinc, bromine, gold, and antimony, made into a paste with flour or liquorice powder. Sometimes he used the chloride of bromine alone, using it both externally and internally; and when the slough had been formed, he used lettuce poultices till it separated. There can be no doubt that Landolfi removed an immense number of cancerous tumors by his paste in Italy, Germany, and France, and that healthy granulations sprung up, and firm cicatrices very often resulted. He used to assert that out of four thousand cases of cancer he had treated, the disease had not recurred in three thousand. This is what he *said*. He never offered anything like *proof* of the truth of this statement; and when his caustic was tried in the Hospitals of Vienna and Paris the conclusions arrived at were that it was decidedly inferior to the chloride of zinc. Landolfi went himself to Paris, and a number of patients were treated by him in the Salpêtrière, under the inspection of a committee of hospital surgeons. Their report was published, and my colleague Dr. Deville, has just favored me with a copy. The conclusions are, that the chloride of bromine, which is the only peculiarity in Landolfi's treatment, is quite useless as an internal remedy; and that locally it only acts as a blister, raising the epidermis, and exposing the denuded part to the action of the chlorides of zinc and antimony; acting, you observe, just as the ranunculus did in Plunket's paste, the nitrate of silver as used by Justamond, or like any common blister. The committee reported that the pain produced by this caustic was excessive, and that it did not secure the patients from the danger of erysipelas or hemorrhage. Landolfi does not appear to have been more successful in Germany than in France. In November, 1853, he was called to the reigning Duchess of Anhalt-Cothen to remove a cancer of the breast. In January, 1854, Dr. Brunn, a member of the Superior Medical Council of the Duchy, published a pamphlet on Landolfi and his method, in which he announced his success as complete; yet on the 13th of July, 1855, the Duchess died of a return of the cancer of which Landolfi had cured her. Other cases treated at Cothen and Munich died or relapsed. He treated Dr. Seyfert at Dresden, and he died. He treated a Prince of Prussia, and was decorated with the order of the Red Eagle; but here again *cure* meant *cicatrizization*; for I have been assured that the disease was canceroid of the face, and that it has returned. Dr. Valentini of Berlin tried the method in forty-three cases, and published an article in July, 1854, in its favor, but in July, 1855, only one year later, he wrote to say that it had entirely disappointed him. So at Vienna, in October, 1854, Dr. Weinberger published reports of thirty-three cases treated before him by Landolfi. One of the cases reported as cured relapsed while Dr. Weinberger was correcting his proof; and ten months later he wrote, that in cases of medullary cancer the disease 'always returned, even before the cicatrization of the wound,' and that the internal use of the chloride of bromine had no influence whatever in preventing relapse. Landolfi by ministerial authority *selected* six cases himself at the Vienna Hospital, and treated them under the observation of a committee, yet he only cured one, and that was an innocent tumor, a partial hypertrophy of the mamma, for which he destroyed the whole breast quite unnecessarily, and produced a large unsound cicatrix. He wrote to the French Commission to say that the effects of the application of his caustic in France were in all respects similar to those he had obtained in Germany and Italy; and so we find them. Of nine cases of cancer of the breast treated by Landolfi himself at the Salpêtrière two died; in four the disease was aggravated; and in the three in which cicatrization took place the disease reappeared. Not one of the nine was cured. He treated three cases of canceroid, and cured one. In a second the disease reappeared after cicatrization, and in the third it was much aggravated. So much for the three thousand cures of four thousand cases. Well may the French committee add that

Landolf's method 'adds another to the illusions that so abound in the history of cancer.'

"Dr. Pattison, as you may be aware, some three, four, or five years ago, occupied much the same position in London that Dr. Fell does now. Both are physicians with American diplomas, who have professed to cure cancer by secret remedies, who have treated a great many patients, and have published accounts of their treatment. The difference between them is, that Dr. Fell has at length made known the composition of the remedies he employs, while Dr. Pattison has not; although it is pretty generally believed, and not without ground, that the essential part of his preparations was the dried sulphate of zinc, which Dr. Simpson showed in the 'Medical Times and Gazette' a few months ago was a most useful caustic. Dr. Pattison has not been heard of so much since the arrival of Dr. Fell. Indeed the disappearance of one and the advent of the other are supposed not to have been altogether without concert. Where Dr. Pattison may be now, I cannot say, but his publications remain; and I can tell you something about some of the cases he has treated. A report of one of these used to appear in the form of a declaration sworn before the provost of Glasgow, that the patient was cured by Dr. Pattison, after having been regarded by Mr. Syme, of Edinburgh, as hopeless. Mr. Syme informs me that the patient was a small farmer, who had a sore at the corner of the nose. Mr. Syme applied the chloride of zinc to it, but the man went to Dr. Pattison, and so far from having been cured by him 'died in great misery after several journeys to London.' Mr. Syme informs me that a case of cancer of the breast which had returned after operation, and which Dr. Pattison boasted he had cured, is not cured, but that the lady is dying; and that another lady, upon whom Mr. Syme declined to operate for cancer of the tongue, died under Dr. Pattison's care. These are cases which the public never hear of, but which really ought to be made known. In 1855 a book appeared, entitled 'Cancer; its true Nature, Treatment, and Cure. Illustrated by cases. By John Pattison, M.D., 31, Lower Grosvenor Street.' Most of these cases are given so indefinitely, as 'Mrs. H—, from Essex;' 'Mrs. J—, æt. 54;' 'Miss —, æt. 27;' 'Mrs. A—, of Hammersmith;' 'D. C—, from Scotland;' and so on, that it is impossible to find out how far the cures related are correct; but there is a clue to some of the cases, particularly to those treated at Glasgow; and I wrote to Dr. Macleod, a most able surgeon of Glasgow, to ask him to make inquiries about them. Here is his reply:—

"The following is the result of the cases treated by Dr. Pattison in this neighborhood, of which I have been able to find out the particulars:—

"1. David W—, nursery gardner, &c.—This was a case of cutaneous cancer of the cheek—the sore being about the size of a sixpence. Dr. Laurie applied the actual cautery twice; after which it healed for a short time, and again broke out. Pattison treated him, in 1852, for six weeks, during most of which time he was put to great agony—the caustic being applied, at one time continuously for eight days. He was pressed to submit to it, in order to see 'whether a caustic which had been so effectual in America, would act in the same way in this country.' The sore healed up after this, and has remained well till lately, when the old lancinating pain has returned, the hardness (which had never left it) has increased, and the inner end of the cicatrix has begun again to ulcerate. The man himself says he is sure he is going to have a return of his disease, and acknowledges that 'the cure' has entirely failed.

"2. Miss M—, of 28, Parson Street.—It is eight years since she first observed a small pimple on her right cheek, which remained long small and painless. It was hard, but quite superficial. About two years after its first appearance, it broke and 'wept.' It was many times healed by Dr. Ritchie, by simple means. Having again appeared she put herself, four years ago, under Dr. Pattison's care. It was then 'no larger than a herring scale, and felt, when she bent down, as if it would drop out.' Dr. Laurie had seen her just before this, and had told her to have two decayed teeth drawn. This she did, but hearing immediately afterwards of Dr. Pattison, she did not wait to see the result of Dr. Laurie's recommendation, but put herself at once under the charge of Dr. P., who told her it was lupus. The sore had all along re-

mained quite small and superficial—had not spread, and caused hardly any uneasiness. She was in London, under Dr. P., for seven weeks, and was apparently cured. Caustics were very frequently applied, and she was told that 'a very large bad lump had been took away.' She came down to Glasgow, and in fifteen months afterwards she was as bad as ever. She returned to London, and was seventeen weeks under Pattison, who 'again took away a great mass of disease.' The sore caused by the caustic healed, and there has, up to this time, been no return. The cicatrix on the right cheek is as large as a florin, white and sunk. There is no hardness, or any breach of surface. Dr. Ritchie says that the sore was 'suspicious' when under his care, but he would not have pronounced it 'malignant.' It was very superficial; and the description given by the girl herself, that it was a 'weeping pimple,' seems the best which could be given of it.

"3. Mr. L—, foreman in a manufactory here, I can hear nothing of.

"4. Mr. C—, auctioneer, was a case similar to that of David W—. He was twice operated on by Dr. Laurie, and on the reappearance of the disease, fearing another operation, he went to Pattison. He was twice under this gentleman's care—once in 1853 for three weeks, and again in 1855 for two months. The disease, which was very limited, in a great measure, though never completely, disappeared after his first visit to London, but in a few months after it again came back worse than ever. He was at that time put to so much pain, that 'he thought he would have died.' In 1855 he was again treated by Pattison; the disease knew no amendment, and it is now spreading, though slowly, and he is about to submit himself to more legitimate interference. This patient has dissuaded many others from going to Pattison.

"5. Miss P—, of Glasgow, had been three times operated on with the knife. Had the disease—a cancer of the breast—temporarily removed by Pattison, in 1853. It returned in the spring of 1856, and has now been eight months under Pattison's treatment, where she still remains, 'daily getting worse,' (so say her friends).

"6. A sister of this lady's lately died under Pattison's care; but from what I can learn, she was in so advanced a stage of cancer of the tongue when he saw her, that her death by no proceeding could have been long delayed.

"7. Mr. R—, lupus of the nose, said to have been treated by Mr. Lyon, of Glasgow. Mr. Lyon knows nothing of this case, nor can I hear anything of it.

"8. Mrs. W—, 'ulcer of the leg, of five years' standing; attended by Dr. Gairdner, of Glasgow, cured by Pattison.'

"This was a common varicose ulcer of the leg, for which Dr. Gairdner could not persuade the patient to lie up for a day. She put herself under Pattison for some months, in London, and followed all his instructions, of which rest was the chief. She came home well, and remained so for a time. The ulcer again appeared when she became pregnant, and it is again nearly as bad as when she was under Pattison.'

"I am sure, gentlemen, I need not trouble you more with Dr. Pattison's cures. I have made inquiries myself about others, and I have only found *one* in which the cure was permanent, and that was the case of a small superficial sore on the face, possibly malignant, possibly not.

"I do not mean to say much about Dr. Fell. His position is somewhat peculiar; for though he used a secret remedy, he was very open in exhibiting its effects to medical men, and he has lately made known its composition, in compliance with an agreement entered into with the surgeons of the Middlesex Hospital, in a book he has recently published. In his preface he talks of the 'gratitude of a multitude of cured patients;' but, as the treatment of the earliest case he has recorded, as treated in England, was commenced July, 1855, and the lady died with pulmonary complication in the following April, and the other cases are of much later date, it is obviously absurd to talk of cures, when only a few months have elapsed after cicatrization. I know of cases in which the disease has returned after removal by Dr. Fell himself, and that in a much shorter period than two years; and, looking upon the essential part of his treatment to be the local use of chloride of zinc, it appears to be most unlikely that the results will differ from those obtained by Canquoin and

others by the use of the same caustic. The report of the surgeons of the Middlesex Hospital was drawn up within two months after the treatment was commenced there. I may tell you that Dr. Fell has not published all his formulæ in his book. At the Middlesex Hospital he uses an ointment containing snuff and acetate of copper, and another made by boiling stramonium leaves in lard; but the chloride of zinc is the caustic by which the tumor is destroyed; the sanguinaria and cochineal added to it are probably of nearly equal efficacy, and the after-dressings of comparatively little importance."

ART. 68.—*On the use of Manganate of Potass as a Caustic in Cancer.* By Mr. WEEDON COOKE, Surgeon to the Royal Free Hospital and to the Cancer Hospital.

(*Lancet*, Aug. 22, 1857.)

Mr. Weedon Cooke speaks highly of *manganic acid*, in combination with *potassa* as a base, as a caustic in the treatment of cancer. It produces, he says, much less pain than any other caustic, and no ill-consequences of any kind. It is a dark-green powder, which may be dredged on the ulcerated surface by means of a pepper-caster.

ART. 69.—*On the Escharotic treatment of Cancer.* By Professor SYME.

(*Edinburgh Medical Journal*, Nov., 1857.)

After some sour comments upon Dr. Fell's mode of treating cancer, and upon the conduct of the surgeons of the Middlesex Hospital, in allowing so irregular an experiment to take place under their auspices, Mr. Syme proceeds to state his own opinion upon the escharotic treatment of cancer, and to offer certain practical rules upon the treatment of cancer generally.

"If," he says, "caustic is ever used for destroying malignant textures, it should, therefore, be of such power and so employed as to strike at once to the root of the evil, and I am able to suggest efficient means for this purpose.

"Mons. Velpeau, in speaking of the caustic made by mixing sulphuric acid with saffron, expresses his persuasion that it would be the best of all escharotics except for its expense and the difficulty of confining its action within certain limits. It occurred to me that sawdust would supply the place of saffron, and my assistants at the hospital ingeniously devised the following effectual means of restraining the extent of action. A solution of gutta serena in chloroform is applied to the skin for some distance round the part to be attacked; then a thick piece of the same material, with an aperture cut in it of the requisite size, and softened by exposure to heat, is pressed firmly so as to adhere everywhere to the surface thus prepared; a thin piece is next glued round the edge of the opening, so that, when supported by a stuffing of lint, it may form a wall inclosing the diseased part. Concentrated sulphuric acid, with about an equal weight of sawdust stirred into it, until the admixture assumes a homogeneous consistence equal to that of thin porridge, is lastly applied, in quantity proportioned to the extent of thickness concerned. In the first instance, as the pain is acute, opiates or chloroform may be used; but after a short while, so little uneasiness is felt that the patient can easily allow the caustic to remain for ten or twelve hours, when it will be found that the whole diseased mass, though covered with skin and several inches in depth, has been reduced to a cinder, presenting the appearance of strongly compressed tow. Under poultices, the slough separates in the course of days or weeks, according to its depth, and the sore then heals without any trouble. If, therefore, patients, from an unconquerable dread of cutting, should prefer the escharotic treatment, or if the circumstances, on any other account, should seem to render this method eligible, the procedure just described may be found useful.

"In conclusion, I beg to offer the following principles or practical rules for the treatment of cancer:—

- "1. The treatment of cancer may be divided into curative and palliative.
- "2. The curative treatment should not be undertaken when the local disease

is so seated or connected as to prevent its complete removal; when the lymphatic glands are affected; and when the patient's general health is deranged.

"3. Removal may be accomplished by means of the knife, escharotics, and ligatures.

"4. Of these means, in general, the knife is best, and ligatures the worst.

"5. Escharotics may be used with most advantage when the disease is superficial.

"6. Escharotics, employed with a curative view, should always destroy the whole morbid part by one application.

"7. The palliative treatment is generally best accomplished by means of soothing applications and attention to the general health.

"8. When the local disease is very troublesome, it may sometimes be relieved for a time by destruction of the morbid growth.

"9. The best agent for this purpose, and also with a curative view, is concentrated sulphuric acid properly applied."

ART. 70.—*On a Case of Manifold Neuroma, with a Remarkable Local Tendency to Relapse.* By Professor VIRCHOW.

(*Virchow's Archiv*, Bd. 12, 1857; and *Dublin Quarterly Journal of Medicine*, Nov., 1857.)

On the 4th of May, 1857, Professor Virchow received from Dr. Schmidt, of Bernberg, some diseased masses with the following account:—

"'Inclosed,' says Dr. Schmidt, 'I take the liberty of sending, for your kind examination, some diseased masses, which, early to-day, I extirpated, or, more correctly speaking, enucleated. Their seat was on the lower two-thirds of the flexor side of the forearm. As to the history of these peculiar tumors, it is, in the first place, remarkable, that according to the recollection of the patient, a man of sixty-one years of age, a movable tumor, of the size of a lentil, with natural integumentary coverings, formed thirty-four years ago on the flexor surface of the forearm, not far from the wrist-joint. Its growth was so slow that at the end of twenty years the tumor was about the size of a cherry. About five years ago it had attained the circumference of a middle-sized apple. The swelling, which had previously been free from pain, caused some suffering, on which account Professor Blasius, in 1852, extirpated the tumor. The healing of the wound was tedious. In fifteen months, at midsummer, 1853, a tumor formed anew in the same situation, which in the spring of 1854 had far exceeded the size of the first, was uneven, and had become excoriated on the surface, giving rise to bleedings. Professor Blasius, therefore, had recourse again to extirpation, which was very difficult, in consequence of the secondary masses having formed firm attachments to the skin, the tendons, and even the periosteum of the radius. After this operation relapse took place very soon—even in June the new masses were considerable in number and circumference. It was, therefore, necessary this year to have recourse again to extirpation. But scarcely had the wound caused by this operation healed when the after-products again appeared. The fourth operation was performed by me in October, 1856, when the relation of the tumor to the tendons and periosteum was as before. A portion of the masses could be scooped out with the fingers without the knife.

"'The fifth operation was, as has been mentioned, performed to-day. The masses were again seated partly in the areolar tissue, partly among the tendons and muscles, and partly on the periosteum. The operation was very troublesome. It strikes me as remarkable, first, that the disease returns always in the same place; secondly, that the patient has no pain in the tumors; thirdly, that sympathetic swellings have never appeared in the axilla, which would not be absent in actual scirrhus.'

"The masses sent to me consisted of a considerable number of distinct nodules, differing extremely both in size and shape, but exhibiting the greatest similarity in appearance and structure. The entire mass of all, taken together, filled a vessel of six centimetres (2.3622 inches) in height, and about the same in breadth. Some of the smaller nodules, of 1 or 2 centimetres in diameter, were of a more globular shape, whilst most of the larger ones, some

of which measured 3 or 4 centimetres in superficial diameter, and were from 1 to 1½ centimetres in thickness, presented a flatter basis, while the rest of the circumference was, on the whole, semi-globular, but was lobulated with numerous projections of various sizes up to a centimetre in diameter. So far as this lobulated and globular condition extended, the surface was smooth, shining, and covered only with some loosely attached fragments of connective tissue; on the basis, on the contrary, were observed a number of firmly attached striss of a dense, fibrous tissue, which, in many places, was decidedly tendinous. In no situation did any special coat exist. The color appeared, both externally and on section, to be a bright reddish gray, with a slight shade of yellow; the consistence was everywhere considerable, the appearance rather translucent. On section a dense, felt-like, fibrous interlacement, whitish and striated on longitudinal section, more uniform, and of a yellowish-red color on transverse section, was very easily perceived with the naked eye. These fibres, for the most part, radiated in a fan-like form from a point in the outer circumference, situated rather towards the base, and were gradually lost in the homogeneous substance forming the material of the lobes; some indications of lobes were found also in the interior of the nodules. The tumor, on the whole, therefore, closely resembled, on the one hand, the so-called fibroid tumors of the uterus; on the other, the ordinary form of neuroma (steatoma of the older writers).

"The microscopic examination completely supported this analogy. Thus it appeared that the internal structure was in all parts tolerably uniform. A dense fundamental substance, appearing striated on longitudinal section, from which distinct fibres were with difficulty separated, formed proportionally broad bands, ramifying in various directions and again uniting; the intervening spaces were occupied with similarly transversely intersected bands, which on the surface of section exhibited a firm homogeneous appearance. In this fundamental substance lay tolerably dense nuclei, appearing in rows on longitudinal section, separated only by rather slender intervals of substance of an oblong staff-like form, rather slight, and on transverse section small, roundish, and somewhat granular in appearance. Acetic acid made these nuclei very distinct, and gave the entire section an appearance closely resembling that of smooth muscular parenchyma. However, muscular cells could in no manner be isolated; after separation of the fibres, naked nuclei were almost solely to be seen in the fluid.

"The tumor in its composition, therefore, completely resembled the formations recently described under the name of fibro-nucleated tumor. In order to establish with more certainty its internal structure, a portion was boiled for some time in a hermetically sealed glass tube, in a Papin's digester, under a pressure of three atmospheres. The fluid so obtained, when filtered, afforded with alum and tannic acid copious precipitates, soluble neither in excess of these reagents nor in acetic acid. Acetic acid caused a strong turbidity, becoming somewhat lighter when the acid was added in excess, in which ferrocyanide of potassium produced a copious precipitate. Basic and neutral acetates of lead gave rise to decided turbidity, which almost disappeared on the addition of acetic acid. Hydrochloric acid caused a turbidity almost entirely soluble in an excess of the acid, and completely disappearing on saturation with ammonia. Corrosive sublimate produced a strong turbidity.

"The residual more solid matter was very easily divided, and on microscopic examination was seen to consist entirely of fine spindle-shaped cells, in which the nuclei above mentioned were contained. When the mass was first soaked in an ammoniacal solution of carmine, and then super-saturated with acetic acid, the elements became particularly distinct, inasmuch as the cells appeared of a pale-reddish, and the nuclei of a dark-red color. There could, therefore, be no doubt that the tumor consisted essentially of connective tissue, in which the cell-elements were most intimately connected with the scanty fundamental substance, so that in the ordinary mode of preparation only naked nuclei could be found.

"Formations of this kind have hitherto occurred to me only on the nerves, and indeed most usually in larger either ganglion-like or completely tuberculated tumors, most frequently in the brachial plexus. Little as such an idea

was probable in the present case, on account of the size and frequent relapses of the tumor, the circumstance put forward by Dr. Schmidt, that notwithstanding the long duration of the affection, the axillæ had always remained free, indicates the eminently local nature of the disease. I, therefore, subjected the individual nodules, with a view to this point, to a more special examination, which showed that to several of them nervous filaments, very evident even to the naked eye, were attached, and were inserted exactly in the spot whence the fibrous filaments radiated into the interior of the tumor. To one of the larger nodules was attached a portion of nervous filament, recognized with certainty as such under the microscope, 12 centimetres in length, and about half a millimetre in thickness, which penetrated obliquely into the tumor. Internally, I nowhere succeeded in discovering any nervous fibres; posteriorly, on the contrary, the nerves appeared to have undergone no essential change.

"If, therefore, it follows with the greatest probability that the tumor in question was a manifold neuroma characterized by an unusual tendency to relapse, the investigation at the same time again refutes the existence of the fibro-nuclear tumor so frequently spoken of of late, as it demonstrates that the apparently free nuclei were in the present case also contained in the interior of cellular elements of areolar tissue."

(B) CONCERNING WOUNDS AND ULCERS.

ART. 71.—*On the Treatment of Phagedænic Ulcers by Irrigation.* By Dr. J. SUTHERLAND, Surgeon to the 8th Regiment of Native Infantry.

(*Indian Annals of Med. Science*, April, 1857.)

When Dr. Sutherland was putting this mode of treatment in practice in the regimental hospital at Dinapore, he was not aware that a similar mode of treatment had been adopted by Mr. Cock at Guy's Hospital (v. "Abstract," XXIV. p. 120). Dr. Sutherland was led to adopt this plan of treatment by an observation of the case first in order.

CASES.—A young soldier, a Seikh, had been under treatment for intermittent fever with enlarged spleen, and was taking iodide of iron and quinine; at this time a slight sore situated over the spleen took on a phagedænic character, spread rapidly, and threatened to involve a large portion of the abdominal parietes; the usual treatment, constitutional and local, was adopted, with little effect in arresting the spread of the ulceration; there was considerable fever and great pain in the dark and inflamed ring around the sore, nitric acid had been applied without effect, and the patient was very importunate for relief; morphia was given at bedtime to allay pain and procure sleep; under these circumstances it occurred to me that benefit might be derived from a continuous washing away of the morbid discharge as it was formed, and that water, made slightly warm, would be a bland application to the extremely irritable sore; accordingly I decided on having a continued dripping of tepid water over the foul ulcerated surface; this was effected by allowing the water to flow along a skein of thread, one end being placed in a vessel of water above the level of the bed, another end of the thread (or, what answers the purpose nearly as well, a strip of calico), being placed over the sore.

The result of this treatment surprised me; an almost immediate arrest of the phagedænic ulceration took place, and pain and irritative fever quickly abated; from this time the cure was rapid, the sore granulated kindly, and in about ten days a large ulcerated space was filled up with healthy granulations.

The second case in which the remedy was used was equally satisfactory; the patient, a weak young man of a strumous diathesis and a constitution tainted with syphilis, had a bubo in the left groin, extensive sinuses (in the groin), had been laid open and the sore was healing favorably when it suddenly took on a phagedænic character and spread in all directions forming an extensive sore, which, extending upwards, threatened to penetrate the abdomen; having served the satisfactory result of a continuous dripping of water over an ulcerated surface in the case above detailed, I was led to subject this patient

same treatment; the result was equally gratifying, an immediate arrest to the spread of the ulceration took place and the sore healed rapidly; quinine, ammonia, with tinctura opii, which had been given some days previous, were continued for a short time, but no other local remedy was used to complete the cure.

The third case was that of a sepoy of the — N. I.; this man was admitted into the station hospital with an extensive ulcer on the right hip of eighteen months' standing; according to the statement of the patient, he had been fourteen months under treatment in his regimental hospital, and, all applications having failed to heal the sore, he got leave to visit his home that change of air might do him good; the sore becoming worse, he applied for admission into the station hospital at this place; the ulcer was superficial, with jagged edges and unhealthy flabby granulations; there were several small, deep, foul ulcers around the large ulcer, at distances varying from one to five inches; the patient was, at first, very unwilling to submit to the treatment (as it required him to lie in a constrained position), asserting, with much appearance of truth, that he had not benefited by all that had been done for him before; he has been under treatment since the 3d instant, and the large sore has completely healed under the irrigating system, all the small ulcers have also healed, with the exception of two that could not be subjected to the treatment, owing to their position.

I think it probable, from the nature of the ulcers, that the addition of sulphas zinci or nitras argenti to the water would have expedited the cure, but I was unwilling to make the addition, as I wished to try the action of pure water alone on the sores.

ART 72.—On the Treatment of Cicatrices from Burns. By Mr. SKEY, Surgeon to St. Bartholomew's Hospital.

(*Lancet*, Aug. 15, 1857.)

On a recent occasion we had an opportunity of seeing the plan adopted by Mr. Skey, at St. Bartholomew's Hospital, for removing the contraction of tissues consequent upon a burn. The patient was a little girl (Emma B—, æt. 6 years), the front of whose neck had been burnt some years before, and had so contracted as to produce a number of distinct bands, running from above downwards, without very great deformity. The contraction resulting from the burn was treated, whilst the girl was under the influence of chloroform, by making a number of short transverse incisions in various parts of the cicatrized tissues, which gaped as they were made. This plan Mr. Skey has found very efficacious in some eight cases, all of which have done very well. It has certainly the advantage over dissecting up portions of cicatrized skin, in that there is no danger nor risk of sloughing—an accident which not unfrequently makes a case worse than if nothing whatever had been attempted.

On a subsequent visit, we found these transverse wounds healing well, without any appearance of contraction of the cicatrix. She lay upon a flat bed, with her head considerably lower than the shoulders, and the wounds are dressed with narrow pieces of strapping, so as to approximate the ends of a cut to each other—not the sides—and lengthen out the old cicatrix as much as possible.

(C) CONCERNING DISEASES OF THE BLOODVESSELS.

ART. 73.—On the treatment of Aneurism by Manipulation. By Dr. GEORGE C. BLACKMAN, Professor of Surgery in the Medical College of Ohio.

(*American Quarterly Journal of Medical Science*, July, 1857.)

This is the third case in which this mode of treatment has been employed. The account of Mr. Fergusson's case, and of Mr. Little's, will be found in our last volume, p. 276.

CASE.—"John A—, æt. 28, a native of England, entered the Commercial

Hospital on the 7th of April. Four months previously, he felt a sharp pain along the course of the femoral artery at the junction of the lower and middle third of the thigh, and for the first time he observed a pulsation in this region. He had worked for many years as a file-cutter, and had been accustomed to use a small anvil, which was held between his thighs. A swelling was soon detected, and this continued to increase until the time of his admission. There was a space of about three inches between the upper margin of the tumor and Poupart's ligament, and measured along the axis of the limb, the swelling was five inches at its base. The aneurismal bruit was very distinct, and the pulsations perceptible across the amphitheatre. Compression at the groin caused the tumor to diminish considerably in size, and it would immediately regain its former dimensions when the pressure was removed. The patient complained of numbness and other painful sensations in the knee, leg, and foot. As the tumor was daily increasing, and as there was no other indication of disease of the arterial system, I determined to bring the patient under the influence of *veratrum viride*, in order to subdue the force of the circulation. From the time of his admission he was kept on a low diet, and cathartics were administered. On the 11th, I ordered six drops of the tincture every three hours. On the morning of the 12th, I found that the pulse had been reduced in frequency from 94 to 65. At ten o'clock A. M., of this day, he was brought before the class, when with my thumb I pressed forcibly into the aneurismal sac, for the purpose of dislodging a portion of its fibrinous layers, hoping thus partially to obstruct the artery, and to favor the further deposition of fibrin in the sac. Skey's tourniquet was now applied with moderate force between the tumor and Poupart's ligament. The progress of the case may be learned from the following record, kept by Dr. N. J. Sawyer, the house-surgeon:—

"At 12 A. M., his pulse being 110, full, strong, and bounding, he was bled six. Pulse came down to 50, soft and regular, and continued low for several days. (The following are extracts from the Case-Book):—

"April 13th, A. M.—Suffers no pain or uneasiness at all; slept well last night. Entire limb diminishing rapidly in size. Kept the apparatus tight. General health good; whenever any untoward symptom arose, it was promptly met, and the patient kept in a good condition. At intervals, the shooting pain was felt in the tumor, but it gradually subsided altogether.

"17th.—Prof. Blackman ordered the tourniquet to be taken off, the bandage re-applied from the toes, up over the tumor, upon which it was to be tightly wrapped, and the patient to be bled, after which the following was administered:—

R. Antimon. and Potass. Tart., gr. $\frac{1}{2}$;
Pulv. Opii, gr. $\frac{1}{4}$.
Sig.—Take every three hours.

Patient's pulse came down to 65, soft and regular.

"19th.—*Souffle* ceased entirely, but the pulsation continues, though it is very weak.

"22d.—Pulsation in tumor has ceased altogether.

"25th.—Is in fine spirits; has no pain, and wants to walk about. General health very good.

"30th.—Has walked some steps, and complains of nothing but weakness.

"May 21st.—The pulsation in the tumor has never returned. The femoral is firmly plugged as far as the origin of the profunda, and in the popliteal space the pulsation of the artery is hardly perceptible. The tumor is daily decreasing in size, and the patient is anxious to leave the hospital and resume his business."

(D) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 74.—*On the desirability of abandoning extension in the treatment of Fracture.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Oct., 1857.)

The following important remarks are *apropos* of a case of fracture through the trochanters of the thigh-bone:—

“George T—, æt. 23, recommended by Dr. Anderson of Selkirk, was admitted into the hospital under my care, on the 15th of January last, suffering from an injury which had been caused two days before, by a sack of flour falling with great force upon his left hip. I found him lying in bed, with the injured limb shortened, the trochanter major higher up, and more prominent than natural, and the knee turned over the sound one; in short, presenting all the characters of dislocation upwards and backwards. But, as a moderate degree of extension restored the proper aspect, and did so only while it continued in operation, I concluded that the injury was a fracture through the trochanters, in that peculiar direction which the late Mr. Guthrie had the merit of showing might cause eversion of the limb, and of which I placed on record soon after the publication of his paper, another case confirming, by the evidence of dissection, the correctness of this explanation.

“Previously to Mr. Guthrie’s observation, there was much diversity of professional opinion on this subject, and the most eminent surgical authorities were completely at variance with regard to it. Thus, while Paré and Petit had recorded particular examples of the fractured limb being inverted, Louis and Sabatier denied that such a condition ever occurred. Boyer declared that he had neither met with it, nor could imagine the possibility of its occurrence; and Desault, on the other hand, calculated its frequency as being in the proportion of one to four of the cases in which the toes are everted. The causes of eversion being the weight of the limb tending in that direction, as may be seen in a dead body, aided by action of the muscles, especially the flexors of the knee, the iliacus internus and psoas magnus, and the rotators passing from the pelvis to the trochanter major, while the principal or almost sole counteracting force lies in the anterior portion of the two smaller glutei muscles inserted into the forepart of the trochanter major, turning outwards of the limb should certainly be expected as the consequence of this fracture. But it was found by Mr. Guthrie, in examining the body of a patient, who had presented the unusual condition of inversion, that the fracture had detached the posterior part of the trochanter major, together with the trochanter minor, and left the anterior part of the former process connected with the shaft. Precisely the same state of things existed in the case that fell under my own observation, as may be seen from the illustration appended to its history.*

“It is worthy of notice, as Desault remarked, that the muscles which affect rotation outwards must be relaxed by the displacement consequent upon a fracture, as it will approximate their origins and insertions; and, there can be no doubt, that, in such cases, the eversion is counteracted by a very slight degree of force, more suggestive of passive than active resistance, or, in other words, of yielding to gravity rather than resulting from muscular contraction. Thus the effect of detaching the muscles of external rotation in causing inversion, would not be so much by preventing eversion, as by allowing the former condition to be produced through the agency of the smaller glutei, so that the state of inversion would be the only one truly dependent upon muscular contraction. In cases of inversion, I have accordingly noticed that the resistance to adjustment of the broken bone was greater than in the usual state of eversion. Independently of other considerations, the diagnosis of this particular injury is of importance in regard to the prognosis, since whatever difference of opinion may still exist as to the reparation of fractures through the neck of the thigh-

* “*Edinburgh Medical and Surgical Journal*,” 1826.

bone, there can be no question as to their ready reunion when seated in the trochanters, and in cases of eversion it is impossible to discriminate with certainty, by external examination between these two conditions, but when the toes are turned inwards there cannot be any doubt as to the fracture admitting of complete recovery. While, therefore, prudence will always require that fractures of the upper extremity of the thigh-bone should be treated as curable, the surgeon must be cautious in promising a favorable result unless inversion of the limb satisfies him that the case is certainly within reach of remedy.

"In regard to the means of treatment there does not appear to be any room for choice, since the one unquestionably most comfortable to the patient, and most conducive to the end in view, is the 'Long Splint of Desault.' It was accordingly employed in the case which led to these remarks, and with such success that the patient left the hospital on the 13th of March without there being almost any appreciable difference between the limbs by external examination. Sir Astley Cooper objected to this means of treating fracture of the upper extremity of the thigh-bone, that the pressure caused by its extending force would be apt to cause mortification in the feet of old people, who are most liable to suffer this injury. But I have long been satisfied, and by example as well as precept, endeavored to inculcate, that the long splint is not required to maintain extension, and that the good effects produced by it depend entirely upon the prevention of motion in the limb. For this purpose it must be long enough to extend from the patient's false ribs to a little beyond the sole of his foot, and broad enough to equal the height of the knee, as it lies in the straight position, so that, if the patient is an adult, it should be about four feet and a half long, by four inches and a half in breadth. Unless the breadth of the splint be thus proportioned to that of the limb, it cannot prevent rotation; and unless long enough to reach the lower part of the chest, it must be equally incompetent to prevent motion of the hip-joint. Yet, in the 'Surgery' of Desault, by Bichat, it is represented as extending no higher than to the trochanter major, and not more than three inches in breadth. It is, therefore, not surprising that the splints of this kind, employed in practice, are so frequently defective in their essential requisites—being almost always too narrow, and either too long or too short. One sent to me lately from New York is six feet long, and three inches and a half in breadth, with a longitudinal slit for fixing at different distances a screw, having a hook at its extremity, for the more effectual maintenance of extension. But from what has been said, it will, I trust, appear that any such extension must be useless in fracture, through the neck or trochanters; and even when the shaft is concerned, an extending power cannot be required: since, if the broken surfaces are properly adjusted, it is unnecessary; while, if they are not so, it is altogether inadequate to replace them. So soon as possible after the injury, the fracture should be carefully set, through due extension and manipulation, guided by regard to the form of the sound limb, and then, if in the shaft, be supported by two lateral splints of pasteboard, or split wood, long enough to extend from the pubis and trochanter major to the knee, and which may be secured by four or five looped bandages. The long splint, if properly applied, will then prevent rotation and insure perfect immobility. There should not be any bandages employed that cannot be undone without deranging the limb; and, therefore, instead of several long rollers, such as are frequently used, a sheet or table-cloth is preferable—the splint being wrapped in it, until merely enough is left for folding over the thigh and leg. Under this mode of treatment, for which all the requisites are so simple that they may always be procured extemporaneously, recovery is completed with great comfort to the patient, and no less credit to the surgeon, there being, in general, hardly, if any perceptible difference in the limbs, instead of shortening to the extent of two inches or more, which happens so frequently, as to have been considered by some authorities as almost unavoidable.

"In conclusion, I beg to express my persuasion—

"1. That the great requisites for treating fractures successfully, are coaptation and immobility.

"2. That extension, or a struggle between the two opposing forces of mu-

cular contraction and a mechanical power, is not consistent with either of these conditions.

"3. That, therefore, extension should be abandoned in the treatment of fractures."

ART. 75.—*On the treatment of ununited Fracture.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, May, 1857.)

"When there is merely a slight degree of mobility at the seat of injury, so that, although quite sufficient to prevent any useful exercise of the limb, it may require some care for its detection, there will be a favorable prospect of success, even after the expiry of several months, through the employment of means for the complete prevention of motion; and I have put upon record cases in which even the thigh-bone was rendered perfectly rigid by this simple expedient, in circumstances of apparently a very hopeless character, from the long duration of flexibility. But when the extremities of the bone remain quite separate, or even overlap each other, and are surrounded by a sort of fibrous capsule with cellular interstices, so that they admit of hardly less free motion than if there really were a joint between them, it is evident that merely preventing motion could not possibly prove sufficient for the production of an osseous union. It has been supposed, that the difficulty thus presented might be overcome by rubbing the ends of the bones together; by stirring up the texture connecting them through the agency of needles or tenotomy knives: by passing setons through the flexible medium of union; and by inserting pegs of ivory into the respective osseous surfaces. But, so far as I am able to form an opinion on the subject, all of these means are absolutely useless, and owe any share of credit that they may have acquired to the prevention of mobility which is conjoined with their employment. In short, I believe that the procedures in question cannot accomplish recovery in any case not remediable by the enforcement of rest, and that they consequently, must always be useless, if not injurious. There is still another mode of treatment, which consists in cutting off the ends of the bone, so as to obtain two fresh osseous surfaces, and place the limb in a condition similar to that of a compound fracture recently inflicted; and this, I feel persuaded, affords the only reasonable ground for expecting success in cases not amenable to the influence of immobility. It is true that the experience of this method has not hitherto been at all satisfactory, through want of due attention to some circumstances in the mode of procedure, which must in a great measure determine the result. Of these may be specially mentioned an imperfect removal of the ends of the bone, and a want of complete immobility after the operation. The following case will, I hope, tend to illustrate the importance of attending to these points.

CASE.—"J. H—, æt. 34, a private of the — Foot, while discharging some duty in the Redan, on the 8th of December, 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3d of February, and was sent to the hospital at Renkioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

"In the hope that relief might still be afforded, he applied to me on the 22d of January last, nearly fourteen months from the date of the injury; and finding that the arm was entirely useless through the extreme mobility of the

ends of the bone, which overlapped each other to the extent of more than an inch, I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest. In preventing the motion of a joint, it is a most important principle, never to be forgotten, that as most of the muscles pass over two articulations, it is impossible to keep any one perfectly quiet without placing the whole limb under restraint. Proceeding under this impression, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft in a sort of capsule, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its pasteboard case, in which an aperture had been made over the wound, then nearly healed, and discharging a very little matter, that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th of January, the limb was examined, and found to be quite straight, with a firm osseous union; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm."

ART. 76.—*A Revision of the Doctrine of Dislocation.* By Prof. ROSER.

(*Archiv für Physiolog. Heilkunde*, p. 42, 1857; and *Med.-Chir. Review*, Oct., 1857.)

Professor Roser lays down the following maxims respecting dislocation, as illustrated by dislocations of the femur, derived from observations, inquiries, and experiments continued over many years.

1. The essential obstacle to the reduction of a dislocation almost always consists, not in muscular contraction, but in the narrowness of the aperture in the capsular ligament.
2. The difficulty of reduction generally arises only from its not being at once possible to ascertain the direction and position of the luxated head in relation to the rent in the capsule. When these are found, the bone is either reduced of itself by muscular action, or a slight impulse, rotatory movement, &c., causes the head to slide in.
3. Much depends not only upon the size but upon the position and direction of the rents in the capsule.
4. The head of a dislocated bone is not, as a general rule, found in the primary position which was given to it by the force applied; but, under the influence of the flexion, adduction, &c. of the dislocated limb, immediately following, it assumes a secondary position.
5. The reduction-process must have for object, first, to restore the dislocated bone to its primary position, and thence to effect its return.
6. The classification of the dislocations of every joint must be based upon the essential anatomico-mechanical points; and the symptomatic classification adopted by Malgaigne is as unscientific as it is impracticable.
7. The most common dislocation of the head of the femur is downwards, when it passes beneath the tendon of the *obturator internus*.
8. This dislocation is produced by violent flexion of the hip-joint, during slight rotation of the thigh inwards.
9. The dislocation downwards becomes in general converted during extension (with rotation inwards) into dislocation backwards, *luxatio ischiadica*.
10. By abduction it may be converted into a *luxatio obturatoria*.
11. For the reduction of all these cases in which the hole in the capsule exists below, strong flexion appears to be necessary, in order to bring the head of the bone into its

primary position, opposite the rupture of the capsule. 12. The dislocation on to the *foramen ovale* appears to be a mere variation of the dislocation downwards. 13. In the *luxatio obturatoria* the head of the bone is placed beneath and behind the *obturator externus*. 14. Malgaigne's "perineal luxation" is only a slight modification of the *luxatio obturatoria*. 15. The dislocation forwards, between the *fossa ileo-pectinea* and the *psoas*, is produced by excessive extension with rotation outwards. A secondary displacement results from slight flexion. The reduction is brought about by extension and rotation inwards. 16. Luxation behind the *pectineus* is to be regarded as a mere modification of the *luxatio ileo-pectinea*. It is not to be considered as a *luxatio obturatoria*. 17. The extremely rare luxation on the outer side of the anterior inferior spine must be regarded as a modification of the *luxatio iliaca*, produced by violent rotation outwards. 18. The *luxatio iliaca* is the rarest of all the forms of dislocation, although it is commonly regarded as the most frequent. The majority of those cases that have been so termed, and a considerable portion of those cases so denominated by Malgaigne are, in fact, examples of *luxatio ischiadica*. 19. The *luxatio iliaca* essentially arises from rotation inwards, with adduction and flexion of the limb. Its reduction is based upon rotation outwards."

(E) CONCERNING DISEASES OF THE BONES AND JOINTS.

ART. 77.—*On a Disease resembling Caries.* By Dr. BALLINGALL, Acting Professor of Surgery, Grant Medical College.

(*Transactions of the Medical and Physical Society of Bombay*, No. 3, New Series, 1857.)

Dr. Ballingall's object in this paper is to direct attention to a disease of the shafts of long bones in external characters resembling "caries," but differing from it in being frequently curable without operation. He is induced to bring forward some cases of this affection from a feeling that it is not generally understood (works on surgery not containing any special descriptions of it), and partly also from a conviction that cases remediable by treatment are occasionally set down as incurable, or subjected to operation. In doing this he claims no originality; the subject was first suggested to him by a passage in a paper of Mr. Syme's, which is as follows: "Everybody knows that the shafts of bones, and especially the tibia, in consequence of chronic inflammation, are frequently enlarged, thickened, and at the same time loosened in their texture, which comes to have nearly the same appearance as that of the spongy articulating extremities. In bones so altered, caries occasionally occurs, or I should rather say a condition resembling caries, since it differs from this disease in one important feature, viz., incorrigibility. I have hardly ever known this spurious caries resist the local application of blisters and internal use of oxymuriate of mercury; and I have felt very uncomfortable in seeing extensive incisions, rasping, trephining, and glowing choppers bristling with actual cauteries, employed ineffectually to cure complaints admitting of such easy remedy."

This expanded state of the dense tissue of long bones is described in surgical works, but only in a general way, and as unconnected with sinuses or ulcers of any kind. Now in many cases the inflammation goes a step further, abscess forms, and, after the discharge of the matter, fistulæ are left having the same fungous granulation as in caries, and on passing a probe down to the bone it is felt to be rough and soft. Such a state is exactly what we find in caries, and probably may be called so by many surgeons, not being at all agreed in their definition of that disease. "Without therefore disputing about terms, I should simply state what I believe to be the fact, that a softened and exposed state of the hard tissue of bones is frequently curable by medical treatment, while a similar state of the cancellated texture is extremely intractable, and generally requires removal of the affected portion.

"The only other disease with which the affection in question can be confounded is necrosis, which almost invariably attacks the same tissue, but the

sensation on probing will, I think, generally enable us to distinguish the hard and firm feeling of a piece of dead bone from the softened state above described, while, in long-standing cases, the detachment of the sequestrum will further facilitate the diagnosis. It is quite possible slight exfoliation may occasionally occur, as it sometimes does in caries; no such result has, however, been observed in any of the cases I have seen.

"The pathology is, I believe, simply an inflammation of the bone and its periosteum, leading to expansion of its texture and ultimately to suppuration. The inflammation is probably frequently of syphilitic origin. In one of the cases observed, the patient had suffered from that disease; and in the second case, though the man denied having ever had any venereal disease, the subsequent occurrence of iritis, apparently syphilitic, rendered his statement doubtful.

"The treatment should be simply that of inflammation of bone, iodide of potassium being the remedy most commonly employed for this purpose. I would, however, recommend small doses of mercury to be given at the same time, and more especially in cases bearing evidence of syphilitic taint. The efficacy of the latter remedy seemed to me well shown in the second case, where very rapid closure of the sinuses occurred on the patient's mouth becoming affected by calomel given for the iritis. Locally a few leeches may be applied in the early stage where there is much tenderness, but a succession of blisters will be found most efficient in subduing the deep inflammation.

"The following are brief notes of some cases treated in the Jamsetjee Jejeebhoy Hospital:—

"CASE 1.—A Mussulman, admitted August 31st, 1854, with extensive cicatrices over the lower portion of the left scapula and several sinuses through which the probe could be passed down to the bone. This was felt to be exposed and softened. The disease seemed to have begun with abscess; but no precise history could be obtained. He denied having suffered from syphilis. The treatment consisted in the administration of iodide of potassium with the application of blisters. Steady improvement took place, and he was discharged, with a soundly cicatrized surface, on November 19th.

"CASE 2.—A Mussulman, æt. 25, admitted August 31st, 1855, with sinuses over the eighth rib on the right side, leading to bare and soft bone. A good deal of periosteal pain was complained of in this case. Treatment consisted in the use of iodide of potassium and blisters, with small doses of Plummer's pill. This patient denied having suffered from syphilis; but, on September 22d, iritis, apparently syphilitic, appeared. For this calomel was given till the mouth was affected, and on October 6th the sinuses had quite healed.

"Two other cases, one of sinus over the scapula, the other over the ribs, were treated in the surgical ward; but the termination is not known, as one was discharged for misconduct and the other deserted.

"I have very possibly overrated the importance of the above affection, but it has impressed me rather forcibly, from the fact of the majority of the patients having undergone long courses of treatment without benefit, and from the first patient (otherwise a stout healthy man) having, if his own statement be credited, been discharged from service as a soldier in consequence of the incurable nature of the disease. The cases which I have brought forward are too few to draw any accurate conclusions from; my object has been chiefly to draw attention to the subject in hopes of further information, and to advocate a mode of treatment, which, while it may sometimes render an operation unnecessary, does not in any way interfere with its performance in case of failure."

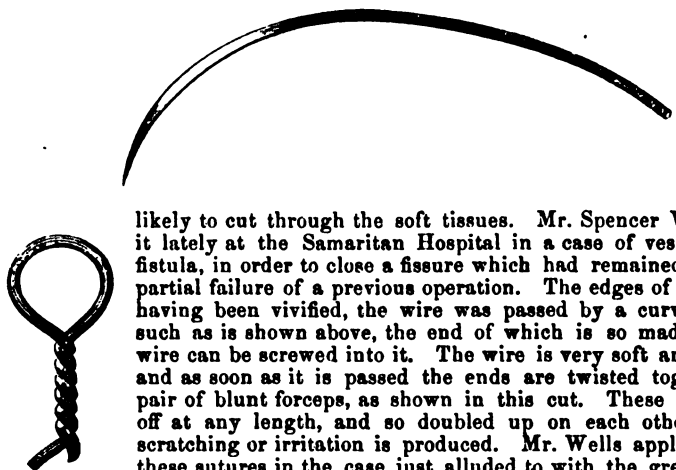
(F) CONCERNING INSTRUMENTS.

ART. 78.—*On the Lead-wire Suture.* By Mr. SPENCER WELLS.

(*Medical Times and Gazette*, May 30, 1857.)

This suture, so much used by Dieffenbach, is not often employed in hospital practice. Yet it is occasionally useful when it is necessary to apply a suture

to any part not easily reached, especially when it is desirable that the thread or wire should remain several days, because it is easily applied, and it is not

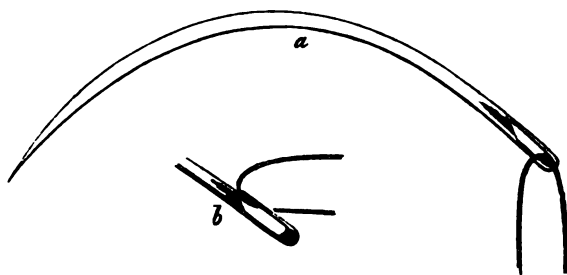


likely to cut through the soft tissues. Mr. Spencer Wells used it lately at the Samaritan Hospital in a case of vesico-vaginal fistula, in order to close a fissure which had remained after the partial failure of a previous operation. The edges of the fissure having been vivified, the wire was passed by a curved needle, such as is shown above, the end of which is so made that the wire can be screwed into it. The wire is very soft and flexible, and as soon as it is passed the ends are twisted together by a pair of blunt forceps, as shown in this cut. These can be cut off at any length, and so doubled up on each other that no scratching or irritation is produced. Mr. Wells applied two of these sutures in the case just alluded to with the greatest ease, and the wire was twisted until the parts were brought into accurate apposition.

ART. 79.—A New Needle, with opening eye. By Mr. SPENCER WELLS.

(*Medical Times and Gazette*, May 30, 1857.)

In the operation now coming into fashion for the relief of prolapsus of the uterus, vaginal cystocele and rectocele, by perineal suture, as revived by Mr. Baker Brown, since practised by Dr. Savage and Mr. Spencer Wells, and more recently performed by Mr. Fergusson and Mr. Erichsen, some little delay and difficulty have been caused by the needles used for passing the deep sutures intended to support the quills. Mr. Brown and Dr. Savage use the common needle fixed on a handle, which is passed through both lips of the wound made by the removal of skin and mucous membrane. This needle is not passed very easily, and there is a little difficulty in holding the thread with forceps, and withdrawing the needle. Mr. Fergusson avoids this by using a common curved needle; but then he has to cut off his thread, and to tie a knot to form the loop which is destined to support the quill. In order to avoid this loss of time, Mr. Spencer Wells has contrived the needle shown in the annexed cut (a). It pos-



sesses all the advantages of the open eye needle, without the disadvantages of the latter, namely, the possibility of impediment in passing it, and the probability that the thread may slip out. To all appearance the eye resembles that of an ordinary needle, but one side of it, as shown here (b), is made to open,

so that the thread can be drawn out, the side closing again instantly by its elasticity. Needles on this plan will probably prove useful in other operations. Those used by Mr. Wells have been made for him by Messrs. Whicker and Blaise, of St. James's Street.

(G) CONCERNING OPERATIONS.

ART. 80.—*On the desirability of previously securing the Vessels where Amputation is performed in very feeble persons.* By Mr. STANLEY, Surgeon to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, March 7, 1857.)

On a recent occasion Mr. Stanley performed the operation of amputation in two patients, both of whom were reduced by the disease to a state of extreme debility. One of them suffered from ankylosis of the knee, the soft parts, skin, &c., having also been disorganized by sloughing, &c., up to within a little of the groin. The operation had to be performed just below the great trochanter. Blood being of the utmost value, it was decided to tie the femoral artery before completing the incisions; and, accordingly, it was divided in the first incision, which was made to cross the front of the limb. Having been secured without any loss whatever of arterial blood, a flap was cut posteriorly, and the amputation completed. The measure was one of caution, which may have been necessary. It is to be wished that surgeons were more often willing to sacrifice the *éclat* of an operation by attention to such details, which not unfrequently are of extreme importance to the patient's chance of recovery.

ART. 81.—*On the Prevention of the Ill-consequences of Operations.* By Professor DEROUBAIX.

(*Presse Med. Belge*, No. 17-24, 1857; and *Med.-Chir. Review*, Oct., 1857.)

Professor Deroubaix, Surgeon to the St. Jean, Brussels, terminates a series of papers upon this subject with the following summary:—

1. If it is the duty of a surgeon to seek, by the improvement of his operative procedures, to obviate the immediate accidents of operations, the endeavor to discover the means of prevention of the secondary accidents, which are far more dangerous, is still more imperiously demanded at his hands.

2. Could the great surgical operations be rendered less dangerous in themselves, the intervention of surgery would be much more clearly and more frequently indicated in cases where the practitioner now often is obliged to remain a passive spectator of disorders which infallibly prove fatal.

3. The danger of great operations is not due to the size of the surfaces concerned, but to the number and volume of the veins divided.

4. When the division of veins proves mischievous, it does so by giving rise, through a mechanism the nature of which it is not always easy to appreciate, to the production of purulent infection, one of the most fearful consequences of traumatic lesions. The great danger and extreme frequency of this complication justify the efforts made for its prevention or removal.

5. There are two directions, both perhaps equally good, by following which we may succeed in rendering pyæmia of much less frequent occurrence. The first of these consists in improving and rendering less uncertain the process of healing by the first intention; and the second in so modifying the divided surfaces as to convert them into a lesion of continuity of far less dangerous character.

6. Metallic caustics, at least in the immense majority of cases, do not give rise to purulent infection; but they are not applicable to certain operations—as, *e. g.*, amputations.

7. It is rational, then, when seeking for substitutive or modificatory means for the prevention of pyæmia, to resort to such as most resemble caustics in their mode of action, and yet are exempt from the disadvantages of these therapeutical agents.

8. The tincture of iodine would seem to possess properties enabling it to fulfil these indications, seeing the deep-seated modification it impresses on the tissues, and the plastic effects it gives rise to. It does not act upon the ligatures, and therefore does not give rise to the danger of secondary hæmorrhage. When it is applied to bleeding surfaces after an operation, it induces a general hyposthenic effect of short duration, and a local hyposthenic effect, which imparts peculiar characteristics to the granulations and cicatrization.

9. The most remarkable results of this hyposthenization are; the much less indolence of the wound, the slight amount of suppuration, the notable diminution of the general reaction, and the maintenance of a condition approaching that of health. These phenomena offer no impediment to rapid cicatrization.

10. The discharge from the surface of the wound is considerably diminished as a consequence of the application of the tincture; but this does not prevent artificial hæmorrhage, or the loss of blood from the large veins.

11. The putridity of the wound becomes evidently diminished; and when the tincture is applied to the divided extremities of the veins, these become corrugated and narrowed, and then agglutinated. If phlebitis arises, it is obliterative and adhesive, not suppurating.

12. The application of the tincture to the sawn surface of the bones does not lead to necrosis.

13. The tincture imparts no preservative power against pyæmia when an open venous orifice, through which pus may be easily, so to say, mechanically introduced, exists at any point of the surface.

14. In ordinary cases, even the tincture is no certain preventive of purulent infection. When, after it has been applied, we find the vicinity of the wound remaining very painful, we should suspect a commencement of phlebitis, and the course of the pain should be carefully inquired into.

15. It should be remarked that as the general hyposthenization which results from the application of the tincture exhibits itself in symptoms, comparable to a certain point to those produced by chloroform, prudence is required in the simultaneous or successive employment of the two substances. Perhaps this is the principal defect of the iodine.

16. The injection of the tincture into the veins is immediately fatal. It induces an entirely peculiar coagulation of the blood, incapable of being confounded with any other pathological or spontaneous coagulation.

17. Nevertheless, this medicinal substance cannot, when applied to a bleeding surface, be carried in substance into the torrent of the circulation, unless, indeed, venous orifices be maintained open by adhesions. It is absorbed in the state of an alkaline iodide, and may be found in such a state of combination in the blood and urine. The amount ordinarily absorbed exerts no ill effect upon the economy.

(H) CONCERNING ANÆSTHETICS.

ART. 82.—*Statistical Inquiry into the effects of Chloroform.* By Mr. FENWICK, Lecturer on Pathological Anatomy at the Newcastle College of Medicine.

(*Medical Times and Gazette*, June 6, 13, and 27, 1857.)

The facts contained in the present paper are derived exclusively from the Newcastle Infirmary—the experience of seventeen years and a half before the introduction of anæsthetics being compared with the experience subsequent to that period. The conclusions do not agree with those already arrived at by Dr. James Arnott (“Abstract,” XXIV. p. 274). How Mr. Fenwick deals with his subject will appear from what he says about *amputations*:—

“Before the use of chloroform there were registered 225 amputations of the thigh, leg, and arm, of which 54, or 24 per cent., died. Since the use of anæsthetic agents 149 cases of similar operations have been recorded, of which 36 died, showing also a mortality of 24 per cent.

“Before, however, we can draw any conclusion from such facts, we must

carefully exclude all those circumstances which are already known to produce an effect upon the mortality of amputations. It is, for instance, well known that amputations performed on account of accidents are, on the whole nearly twice as fatal as those required for long standing disease. Now, if we divide the foregoing numbers into these two classes, we shall find that before the introduction of chloroform there were 144 pathological amputations, with a mortality of 19 per cent.; while since its employment there have been only 61, of which 13 per cent. has died; and while of 81 traumatic amputations which took place in the former period 32 per cent. died, only 31 per cent. perished in the latter period. The equal mortality obtained from a general average of all amputations is thus seen to have arisen from the smaller comparative number of operations performed for disease. If the records of other hospitals were carefully examined, it is probable that the increase in the mortality of many of them would be found more apparent than real; for limbs are now *saved* which twenty years ago would have been removed without the slightest hesitation.

"But we know also that the ratio of mortality varies according to the part of the limb at which the operation is performed. Thus, amputations of the thigh are four times more fatal than those of the forearm, and it is therefore absurd to class them together. The following table (Table I.) shows the amputations, divided according to the part of the limbs at which they were performed, with their per centages of mortality.

"It is plain from this table that, since the employment of chloroform, there has been a diminution of mortality; thus, in amputations of the thigh for disease there has been 5 per cent. less death, while after accidents 17 per cent. have been restored to health, who formerly would have perished. In the pathological amputations of the leg there is a difference of 8 per cent. in favor of chloroform; and while 1 out of 3 died after the removal of the forearm for accidents in the former series of cases, no death had occurred out of 8 in the latter. The only exceptions are to be found in the traumatic amputations of the leg, and in the pathological amputations of the arm. In the former there is an excess of deaths since the introduction of chloroform amounting to 5 per cent., and in the latter, the cases being only 2 in number, do not warrant us in drawing any deduction from them.

"I showed in a former paper* that the period in which persons usually sink from the shock of an amputation is within four days after its performance; that from the fourth to the twenty-first day is the usual time during which death occurs from phlebitis and those secondary inflammations which are generally supposed to arise from the introduction of pus into the blood. It will be interesting, therefore, to compare the dates of deaths before and since the employment of anæsthetic agents. In Table II. the chances of death of each person who has suffered amputation are shown.

"There can be no doubt, from this table, that the danger from shock has been partly decreased since the use of chloroform. In the former series it is seen that a person was most likely to sink from this cause after the injuries of the thigh, and that 1 in every 2.66, or 37 per cent. of those operated on had perished within the first four days, while only 1 in 4.5, or 22 per cent., sunk in the same time in the latter period. In amputations of the leg there has been an increase in mortality of 1 per cent. during the first four days, when the operation has been performed for accidents since the use of chloroform; but this may readily be accounted for by the greater number of double amputations that are included in this series. Before the use of chloroform deaths had occurred from shock in the amputations of every part, excepting in those performed upon the arm, whereas since its employment none have sunk from this cause, excepting when it was required for severe accidents of the thigh and leg. Such observations are borne out by the experience of most operators. It seems generally allowed that the use of anæsthetic agents greatly lessens the shock of an amputation, and this means consequently enables us to operate under circumstances where without it we should dread to employ the knife.

* Report of Surgical Operations, "Monthly Journal of Medical Science," October, 1847.

TABLE I.

WITHOUT CHLOROFORM.										WITH CHLOROFORM.									
PATHOLOGICAL.				TRAUMATIC.				TOTAL.		PATHOLOGICAL.				TRAUMATIC.				TOTAL.	
No. of cases.	Deaths.	Mortality.		Number.	Deaths.	Mortality.			Number.	Deaths.	Mortality.		Number.	Deaths.	Mortality.				
Thigh	50	9	18 per ct.	8	5	62 per ct.	58	14	24 per ct.	23	3	13 per ct.	11	5	45 per ct.	34	8	23 per ct.	
Leg	74	15	20 per ct.	38	14	36 per ct.	112	29	25 per ct.	33	4	12 per ct.	46	19	41 per ct.	79	23	29 per ct.	
Shoulder-joint	—	—	—	5	2	40 per ct.	5	2	40 per ct.	1	—	—	5	2	40 per ct.	6	2	33 per ct.	
Arm	11	1	9 per ct.	24	4	16 per ct.	35	5	14 per ct.	2	1	50 per ct.	18	2	11 per ct.	20	3	15 per ct.	
Forearm	9	3	33 per ct.	6	1	16 per ct.	15	4	26 per ct.	2	0	—	8	—	—	10	—	—	
Total	144	28	19 per ct.	81	26	32 per ct.	225	54	24 per ct.	61	8	13 per ct.	88	28	31 per ct.	149	36	24 per ct.	

TABLE II.

CAUSE OF AMPUTATION.	WITHIN FOUR DAYS.		FOUR TO SEVEN DAYS.		SECOND WEEK.	THIRD WEEK.	FOURTH WEEK.	FIFTH WEEK.	SIXTH WEEK.	SEVENTH WEEK.	NINTH WEEK.	ABOVE NINE W'KS.
	Without obloroform.	With obloroform.	Without obloroform.	With obloroform.	Without obloroform.	With obloroform.	Without obloroform.	With obloroform.	Without obloroform.	With obloroform.	Without obloroform.	With obloroform.
Injuries of thigh . . .	1 in 2.6	1 in 4.5	—	1 in 7	1 in 5	—	1 in 4	1 in 6	—	—	—	—
Ditto leg . . .	1 in 9.5	1 in 8.8	—	1 in 39	1 in 8.5	1 in 12	1 in 7	1 in 11	1 in 26	1 in 32	1 in 25	1 in 31
Ditto arm . . .	—	—	—	1 in 26	—	—	—	1 in 25	1 in 8	—	1 in 21	—
Amputation of shoulder-joint	1 in 2.5	—	—	1 in 5	—	—	—	—	—	—	—	—
Diseases of thigh and knee . . .	1 in 25	—	1 in 48	—	1 in 23	—	—	1 in 11	1 in 15	1 in 21	1 in 42	—
Ditto leg and foot . . .	1 in 74	—	1 in 36	1 in 25	1 in 14	—	1 in 38	—	1 in 64	1 in 24	1 in 63	1 in 23
Ditto arm and elbow . . .	—	—	—	—	—	—	1 in 11	—	—	—	—	—
Ditto forearm . . .	1 in 9	—	1 in 8	—	1 in 7	—	—	—	—	—	—	—

Formerly the brandy bottle was an invariable accompaniment to the amputating case; now it is rarely necessary to stimulate the patient. Formerly most surgeons declined to remove a limb after an accident until reaction had taken place; now many do not hesitate to operate in the stage of collapse.

"But the accusation that has lately been brought against chloroform is, that it increases the tendency to pyæmia, and the other secondary diseases that cause the chief mortality after amputations. In Table II. it is seen that in injuries of the thigh, in the former period, 1 in 5 was lost from the fourth to the fourteenth day, and 1 in 4 in the third week: but in the latter period only 1 in 7 died from the fourth to the fourteenth day, and 1 in 6 from the fourteenth to the twenty-first day. In amputations of the leg for injuries, although the general average of mortality appeared to have increased since the introduction of chloroform, a less amount of death has really taken place between the fourth and twenty-first day. Thus, in the former period, 1 in 8.5 in the second week, 1 in 7.5 in the third week, and 1 in 26 died in the fourth week; while in the latter period 1 in 9.7 perished between the fourth and fourteenth day, 1 in 11.6 in the third week, 1 in 32 in the fourth week, and 1 in 31 in the fifth week. The cause of death in 14 cases is recorded as follows:—

"5 died of pyæmia, 1 of erysipelas, 1 of fever, 1 of hemorrhage, 1 of pneumonia, 1 of gangrene, 2 of tetanus, and 2 of hectic. We unfortunately have not the means of comparing this list with the causes of death in this hospital before the use of chloroform; but if we compare it with the numbers who died in the Glasgow Infirmary, we shall find that there is no foundation for the opinion that chloroform tends to produce pyæmia. In the list I have just given there are only 6 cases of pyæmia and visceral inflammation out of 14 deaths, forming 42 per cent. of the whole; while in the Glasgow report, if we in like manner exclude those cases that died from shock, we find 61 per cent. were cut off by these diseases. It will then, I think, be sufficiently apparent that if we take the results of amputation as a test of the effects of chloroform upon operations in general, we shall discover no reason to regret the employment of this agent.

"Although the general average of deaths is the same in both cases, this has arisen from modern surgical improvements; and where the figures are fairly examined, a less amount of death is apparent since the use of chloroform. The danger from shock has been greatly lessened in amputations from accidents, and has been altogether lost in those performed for disease; and, although we cannot positively state that secondary inflammations have decreased since its employment, the mortality has been lessened from the fourth to the fourteenth day, and we have no evidence in support of a contrary supposition."

We must wait for other evidence before forming an opinion upon this important subject; but in the meantime we must agree with Dr. Arnott in thinking it a more rational plan to draw inferences from the collected hundreds of various hospitals than from a few units contained in the report of a single hospital, and this the more, seeing that that particular hospital has been greatly increased in size, and on that account rendered more salubrious since the introduction of chloroform.

ART. 83.—*Case of death from Amylene.* By Dr. SNOW.

(*Medical Times and Gazette*, Aug. 8, 1857.)

CASE.—This, the second death from amylen, occurred in St. George's Hospital on Thursday, July 30th, in a case in which Mr. Cæsar Hawkins removed a small epithelial tumor from the back. The patient, a short, muscular man, was a tailor, æt. 24, who had been in the hospital several months, and had had three similar tumors removed, by as many operations, under chloroform; the last of these operations having been performed three weeks previously. He inhaled the amylen without any difficulty; in about two minutes he appeared to be unconscious, and, in another minute, the sensibility of the margin of the eyelids was somewhat diminished, and I told Mr. Hawkins that he might perform the operation. For this purpose the patient, who had been lying on his

side on the table, was turned a little more on his face, or at least it was attempted to turn him, when he burst out into a kind of hysterical excitement, laughed loudly, and was with difficulty held on the table. Nothing was done during this excitement, which lasted about a minute. After it had subsided, I administered a little more amylene, although the patient had not recovered his consciousness; and then Mr. Hawkins performed the operation, which I believe did not last more than two minutes altogether. During the operation the patient was turned on his face. He rested chiefly, I think, on his knees and elbows. He was muttering in an incoherent manner, and making slight attempts to move, but was easily restrained. I gave him an inspiration or two of amylene now and then during the operation, with the intention of preventing his waking prematurely: for this purpose I turned the head a little to one side, and raised the face a little from the table.* I had concluded that the patient would not require any more amylene, and was expecting that he would show signs of returning consciousness or sensibility almost as soon as Mr. Hawkins had tied the suture which he was introducing; but, instead of this, the limbs became relaxed, and the breathing, though free enough, took on a noisy, snoring character.

This is a state which is common enough in the use of chloroform, and excites no alarm whatever, but I felt that it ought not to occur in the use of amylene, especially after it was left off. I therefore sought again for the pulse at the wrist, and could perceive it only with difficulty, if at all. I spoke to Mr. Hawkins, and we immediately turned the patient on his back. His face had already become livid, and his breathing was of a gasping character. Mouth to mouth insufflation of the lungs was performed, and between the insufflations there were spontaneous acts of inspiration, during which the air seemed to enter the lungs freely. In a minute or two the lips became of a proper color, and the countenance had altogether such a natural aspect that the patient seemed to be recovering. The pulse at the wrist, however, could not be felt.

No one listened to the chest at this time, for fear of interrupting the process of artificial respiration. After two or three minutes, Dr. Marshall Hall's method of artificial breathing was substituted for the insufflation, and it was continued very perfectly by the house surgeons and others for an hour and a half, with the exception of two short intermissions, which will be mentioned. During three-quarters of an hour of this time there were spontaneous inspirations, during which air entered the lungs, in addition to that which entered during the turning process. Twenty minutes after the accident, the process of artificial respiration was suspended for about a quarter of a minute, to enable me to listen to the chest. I thought I could hear the heart beating regularly, but very feebly, and certainly there was a good vesicular murmur, and the air seemed to enter the lungs by the patient's own breathing, almost as freely as in health. At the end of three-quarters of an hour, with the permission of Mr. Hawkins, I introduced two hare-lip pins which had been connected with the electro-magnetic battery, with the intention of performing galvano-puncture of the heart. The needles were introduced to the depth of about an inch and a half between the cartilages of the ribs, just to the left of the sternum, and on a level with the nipple. They were afterwards found to have penetrated the walls of the left ventricle, near the septum, but without reaching the cavity. There was a quivering contraction of the pectoral muscle when the needles were first applied, but no effect on the heart. The needles ought probably to have been coated with some non-conducting substance almost as far as their points. There were no further efforts of inspiration after this time, but this was probably only a coincidence. The electro-magnetic battery had been applied in the early part of the treatment by means of the wet sponges applied to each side of the chest, but it produced no effect.

An examination of the body was made by Mr. Holmes, the curator of the hospital museum, on the following day. A good deal of dark-colored fluid blood flowed from the right cavities of the heart, and the left cavities contained but little blood. The heart was pale and somewhat friable; but a microscopic

* Less than an ounce of amylene was poured out, and it was not all used.

examination by Mr. Holmes did not show any fatty degeneration. The lungs were moderately vascular, and contained some small epithelial tumors of the same character as those removed from the back. There was a large cyst in one kidney, but with these exceptions, the organs were healthy. The vessels of the brain were not distended, and that organ was altogether less vascular than is usual after sudden death. No smell of amylene was perceived in the body.

ART. 84.—*On the anæsthetic action of Carbonic Oxide.* By Dr. OZANAM.

(*Archiv Gén. de Méd.*, July, 1857.)

Dr. Ozanam relates the particulars of 30 experiments, of which 25 were on rabbits and 5 on man. These experiments prove unquestionably that this gas possesses anæsthetic properties, and these properties Dr. Ozanam considers to be more energetic than those of chloroform, but also more fugitive. He considers, moreover, that the gas is more easily respirable and far less unpleasant than the vapors of chloroform. It is not pretended that the inhalation of this gas is more free from danger than that of chloroform; on the contrary, more than one of the rabbits is said to have passed suddenly and unexpectedly from apparent to real death.

The gas was obtained from oxalic acid by the aid of sulphuric acid and heat, the carbonic acid produced at the same time being got rid of by passing the two gases—carbonic acid and carbonic oxide—through water.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A.) CONCERNING THE HEAD AND NECK.

ART. 85.—*Two cases of Encephalocoele.* By (1) Mr. HOLT, Senior Surgeon to the Westminster Hospital; and (2) Dr. R. U. WEST, of Alford.

(*Lancet*, Sept. 5 and Oct. 3, 1857.)

Mr. Holt's case is also described by Mr. Z. Laurence in another part of the same number of the "*Lancet*," as well as an operation which he took upon himself to perform without Mr. Holt's consent or knowledge. Mr. Laurence's account of this operation is as follows:—

"With the assistance of Mr. H. Taylor, of Guildford, I punctured the tumor at the apex below, and to the right (where the skin was most tense, and no venous enlargements or hairs existed), with a very fine trocar, and drew off gradually, in the course of about ten minutes, exactly two quarts of a thin, limpid, straw-colored fluid, which was alkaline in its reaction, and highly albuminous. Not a single drop of blood was lost in the operation, nor did the child evince the slightest sign of pain; on the contrary, it smiled, and took the breast whilst the fluid was being drawn off. At last, however, it cried a good deal, which was soon accounted for by its vomiting up a large quantity of tenacious, white fluid (milk and mucus), containing also some entangled air, which burst out in large bubbles from its mouth. After this it seemed relieved, and went to sleep.

"On the completion of the operation, the tumor had collapsed into a sac, which, as far as I ventured to examine its contents, was empty.

"A week after the operation I found that no meningitic symptoms had manifested themselves, but that some fluid had re-collected, to the extent of about four ounces in the sac. I now felt distinctly that a small *solid* tumor was present at the pedicle of the sac, in all probability, the cerebellum."

1. *Mr. Holt's Case.*—A female, æt. 3½ months, the child of Mrs. W——, of Guildford. Connected with the back of the head, just below the occipital protuberance, is a large cyst-like tumor, very elastic everywhere on pressure, and, when viewed by transmitted light, transparent throughout. Its measurements are as follows: Around the narrowest portion or neck, nine inches: around the broadest portion, nineteen inches; in the antero-posterior direction, fifteen

inches. Several large bloodvessels may be seen to ramify on the surface of the tumor, decreasing in size and extent as they approach its posterior extremity. Numerous isolated spots can be here and there detected, much resembling an enlarged varicose vein. The anterior half of the cyst is covered on its upper and lateral surfaces with slight delicate hair, an appearance which is altogether confined to these parts.

If the tumor be carefully examined, a constriction may be observed, distant about one inch from the median line, and extending along the whole of its upper aspect, becoming, however, indistinct, and finally obliterated inferiorly. A bi-lobed character is thus given to the tumor, and on the surface of the right or smaller lobe are three or four hemispherical elevations, caused by protrusions of the wall of the cyst at these parts, which are here exceedingly thin. If the finger be passed around the base of one of these swellings, an abrupt and distinct margin may be plainly felt, and by the application of slight pressure they can be easily made to disappear. No pulsation can be perceived in any part of the tumor.

At birth the size of the tumor was considerable, quite as large as an ordinary cricket-ball. Its increase from that period has been gradual and constant. The child's health and condition is uniformly good, and, with the exception of the tumor from its great weight causing so much inconvenience as to require to be always supported, it does not appear to occasion the least suffering. The countenance is quite natural, and the action of the pupil regular; sleep is undisturbed, and the appetite good. The bones of the cranium are remarkably firm, and no trace of a fontanelle is discoverable. The mother has had four children, three of whom, by a former marriage, have died in childhood, from her account, from fever. There is no hereditary tendency to any complaint on either side, as far as can be ascertained. She has abundance of milk, and her health is excellent.

2. *Dr. West's case.*—May 29th, 1851. Mrs. B—, of L—, near Alford, was delivered, after an easy and perfectly natural labor, of a full-sized female child, which had a bag of integument of considerable size hanging down the back from the occiput. This bag contained fluid and a solid substance, which I suspected at once to be brain, in consequence of feeling that a portion of the occipital bone, in the centre of the expanded or "squamous" portion, was wanting. I punctured the bag, and let out a quantity, perhaps two ounces, of bloody serum. The child lived five weeks and then died, with convulsive symptoms, and a peculiar, old-looking, staring expression of the eyes. For the last two or three weeks it appeared to suffer considerably, though for the first fortnight of its life it seemed to thrive, sucking well, and with all the functions well performed. Shortly before its death the discharge from the puncture became very offensive and purulent.

On examination after death, I found the bag contained the whole of the cerebellum, which was in a purulent and semi-putrid state, the result of disease, which was almost a necessary consequence of its unprotected state. The skull, which contained nothing but the cerebrum, was flatter and smaller than natural.

This monstrosity may be regarded as the first stage of the deviation denominated by Geoffroy St. Hilaire, *Notencephalie*.

ART. 86.—*On the abuse of irritating applications in certain forms of Ophthalmia.*
By Mr. CRITCHETT.

(*Medical Times and Gazette*, Jan. 24, 1857.)

There was recently a case under Mr. Critchett's care, in the Royal Ophthalmic Hospital, in which the greatest benefit has been derived from desisting from the measures which had previously been employed. The patient is a lad of eighteen, to whose eyes, for four years past, stimulating drops had been daily applied, on account of chronic inflammation and thickening of the conjunctiva. His eyes had been kept in a state of constant irritation, and when admitted his vision was very imperfect, on account of superficial vascularity of the cornea. He had been sent up from a considerable distance in the country. Mr. Critchett

directed the eyes to be left quite alone, a single seton thread being introduced in each temple. The improvement was extremely rapid, and within a week the greater part of the vascularity had cleared away. No doubt the seton has had some good influence; but, looking at the rapidity of the cure, it seems certain that the chief agent has been the rest from injurious applications. Cases more or less similar are constantly presenting themselves, in which, with a perverseness worthy of a better cause, irritating collyria have been employed for periods far too long.

ART. 87.—*On strumous Ophthalmia.* By D. THORP.

(*Dublin Quarterly Journal of Medicine*, Aug., 1857.)

The substance of this paper, which is to consider the relation between ophthalmic hyperæsthesia and strumous ophthalmia, may be stated in the following propositions:—

That in all cases of phlyctenular or strumous ophthalmia there exists, of necessity, a special lesion of the nervous apparatus of vision.

That this lesion is the cause of photophobia and the other pathognomonic symptoms of the disease.

That it precedes, in most cases, the development of the inflammatory or objective phenomena; and that these phenomena are directly influenced by this condition, and but remotely by the constitutional disorder.

That the lesion in question is a state of hyperæsthesia, or exalted sensibility of certain nerves, viz., the optic and retina, and the ciliary and conjunctival branches of the ophthalmic of the fifth pair.

That the phenomena attendant upon photophobia—namely, contraction of the pupil, spasm of the orbicularis, sneezing, and lachrymation—are the results of reflex action, displayed in a morbid form under the influence of this lesion.

That inasmuch as the impression of light upon the retina is competent to excite closure of the eyelids as well as contraction of the pupil, as proved by the experiment of Magendie, already quoted, optic hyperæsthesia may be admitted to exist as an isolated pathological condition, capable of producing photophobia independently of other nerves.

That the symptoms of ophthalmic hyperæsthesia vary in intensity and character, according as the nerves referred to are separately or conjointly affected; and that physiological experiments, as well as pathological observations, sanction the division of the lesion into three forms.

That the first form (optic hyperæsthesia) is characterized by the impression of light producing a luminous or chromatic glare, attended with a peculiar and distressing, but not painful sensation in the eyes; and that its symptoms, subject to occasional intermissions, commonly precede for several days the appearance of inflammatory phenomena.

That the second or complicated variety of the lesion—that which engages all the nerves before mentioned—being quickly followed by the objective symptoms of strumous ophthalmia, can seldom be recognized for any length of time as a simple nervous affection, although invariably present in all unequivocal examples of the disease.

That ciliary hyperæsthesia (third form) is best distinguished from the other varieties by the neuralgic character of the pain, and that it more frequently follows than precedes the ophthalmic disease.

That a distinction should be made between the ordinary relapsing cases of strumous ophthalmia and those rarer examples of the disorder in which the symptoms pursue a course of greater certainty and steadiness, inasmuch as the therapeutical indications differ in the two varieties.

That in cases of phlyctenular ophthalmia attended with inveterate photophobia, where a satisfactory inspection of the eyeball is desirable or necessary, the anæsthetic influence of chloroform is the most suitable expedient.

That when scrofulous ophthalmia occurs in connection with chronic articular, or such like diseases, and protracted suppurative action is on the decline or has ceased, much benefit may be expected from setons and issues as prophylactic remedies.

That arsenic is a most valuable agent in inveterate cases of this disease, more especially those complicated with chronic eruptions of the scalp or cutaneous surface generally.

ART. 88.—*On the division of Cataract in situ.*

By Mr. MARTIN, Superintendent of Calcutta Eye Infirmary.

(*Indian Annals of Medical Science*, April, 1857.)

The outline of the cases reported in this paper is intended to demonstrate the utility of an operation which has been, for some years, more frequently resorted to for cataract than any other in the author's practice, both as a preliminary proceeding and as the principal operation for individual cases. Its object is to divide a portion of the lens near the circumference, by making an opening in the capsule sufficiently large to admit the aqueous humor, in order that solution may be effected to a certain extent; the lens being left in its position, and the parts with which it is connected being undisturbed, or as little altered in their relative position as possible. A needle is entered through the tunics posteriorly and made to penetrate the lateral part of the capsule, and the substance of the lens at the circumference; it is then rotated a few times with a view of producing division of the lens, and, being then withdrawn, the operation is concluded.

"This operation," says Mr. Martin, "has advantages over others employed for division as follows, viz.:—

"1st. That it causes no alarm or irritation to the patient.

"2d. By its means often an almost immediate improvement of vision takes place.

"3d. Scarcely ever is there any inflammation succeeding it.

"4th. It assists us in our diagnosis (of so much importance with regard to future proceedings) as to whether the lens alone or the capsule with the lens is opaque, also as to whether the lens is soft or hard, whether it has a solid nucleus with a soft circumference or not, &c.

"5th. The anterior hemisphere of the capsule is untouched, and, consequently, if transparent, does not become opaque as a result of the operation.

"6th. The aqueous humor is, by this operation, allowed access to the lens, without the lens being separated from its connections.

"This is the operation most generally performed in the infirmary for cataract, both as a preliminary and as a principal operation. In the greater number of cases of the disease, as it is seen among the natives of this country, the cataract is of a mixed consistence, and may be likened to jelly somewhat hardened, in a great portion, if not all, of the substance. This is often the only operation that is found necessary, but, in many cases, particularly if the nucleus is solid, it is found necessary to perform other operations for division, depression, &c., of what remains. As regards a subsequent operation for depression, it is believed that this preliminary operation does good by getting rid of the softer parts of the lens which, by their lightness, and by the bulk of the object to be depressed, cause it often to rise above the axis of vision after the depression. The softer circumferential parts having been removed by absorption, the subsequent operation enables the less buoyant mass now left, to remain in the position into which it has been depressed. There is also diminished risk of a smaller mass pressing upon and doing injury to the internal tunics.

"There are many cases in which it will be found by no means sufficient to have made a smaller aperture in the capsule, and to have admitted the aqueous humor within it, and incised the lens: it will be necessary to divide the lens more extensively, and lacerate the capsule also more freely; in many cases of the mixed form of cataract it will be enough to do this, although the operation may require to be repeated once or twice; but, in a certain proportion, we find that the opaque lens will not undergo the process of absorption, at any rate if it be left *in situ*; whereas, if we depress the remainder, it will, for the reasons above mentioned, remain after the preliminary operation, below the axis of vision, and, if it do not become readily absorbed, will, at any rate, give rise to

no irritation. In such cases, we may, with confidence, expect the patient to recover good vision, whereas in many cases, particularly where the native practitioners have operated, we find that the lens—bulky as it is often in the native's eye, compared with the posterior chamber and the globe—having been at once depressed has pressed upon the retina, or the iris, or contiguous parts, and done irreparable mischief. This I have found very rarely to have happened in my practice, where depression has been employed after at least one attempt at division, in the manner above reported.

"In a certain but not large proportion of cases, treated by this simple method, I have found no other operation necessary; the patient has attained good vision. But, in general, it has had the effect of slightly improving sight, and this will be seen in the cases above reported, often within a few days, or at any rate a moderate period (from five to twenty-seven days). By the time a month has elapsed, I often see that a patient who before had hardly a glimpse of light can see much more light than before; or, where he could not previously see objects, can make them out distinctly: as soon as it becomes evident that the improvement is not progressive, I then proceed to repeat the operation, or adopt such means as may be found necessary. Often the patient seems to be so well satisfied with the result of the simple operation, that he does not stay to have anything further done. There is another advantage connected with this procedure; this is, that if it be carefully done, there is not a possibility of the nucleus of the lens becoming dislocated. Sometimes we unexpectedly meet with a hard nucleus, or, at least, one sufficiently solid to cause great mischief, if lying in the chamber, with a rather soft circumference; but however much the soft part may become removed by absorption, the nucleus in this method cannot escape through the small aperture of the capsule: on this account the operation is not contra-indicated in cases where we suspect the nucleus to be hard, as we may, at any rate, reduce the bulk of the lens, and that I look upon as a point of great importance, particularly when our practice lies with the Bengallees, with whom the more perfect operation of extraction is, as far as my experience goes, the least successful of any. A small body, even if hard, will lie in the posterior chamber without giving rise to irritation, when a larger one, even less solid, would cause destructive inflammation of the organ."

Eighteen cases are related, of which the first six in order are these:—

CASE 1.—Nobin Doss, æt. 32, out-patient, December 31st, 1852. Lenticular cataract, left most advanced. Sees shadows of objects indistinctly.

January 4th, 1856. To-day the operation of division posteriorly, the lens being left in situ, was performed.

9th.—Sees numbers of fingers well.

Feb. 4th.—Sees features with attention pretty clearly.

7th.—Left hospital.

CASE 2.—Narain Doss, æt. 55, out-patient, December 17th, 1855. Lenticular cataract. Sees shadows of objects.

28th.—To-day the operation of division posteriorly, the lens being left in situ, was performed.

January 2d, 1856.—Sees numbers of fingers, &c., well (5th day).

February 6th.—Sees features, &c., sight very good.

18th.—Left hospital cured.

CASE 3.—Meejaun, æt. 27, in-patient, January 17th, 1856. Lenticular cataract, most in left.

18th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye.

23d.—Sees objects, which could not do before.

March 6th.—Left hospital relieved.

CASE 4.—Sonah, æt. 48, in-patient, January 25th, 1856. Cataract lenticular. February 15th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye (5th day).

20th.—Sees numbers, &c., well. Could not distinguish before.

March 10th.—Left hospital cured.

CASE 5.—Moysoodee, æt. 40, in-patient, February 29th, 1856. Cataract len-

ticular, looks demi-solid. To-day the operation of division posteriorly the lens being left in situ, was performed in right eye.

March 5th.—(5th day) sees very well, features, &c.

17th.—Left hospital cured.

CASE 6.—Syed Mohamed Kosim, æt. 55, in-patient, December 6th, 1856. Lenticular cataract gelatinous at the circumference.

7th.—To-day the operation of division posteriorly, the lens being left in situ, was performed in left eye.

22d.—(15th day) distinguishes numbers well. Afterwards depressed. No improvement resulted.

ART. 89.—*On Spasms of the Eye after extraction of Cataract.* By Mr. WHITE COOPER, Ophthalmic Surgeon to St. Mary's Hospital.

(*Lancet*, June 6, 1857.)

This accident is but little referred to in books, yet it is far from uncommon. Not less than a dozen instances have fallen under Mr. Cooper's notice, and of these he relates three as the text for a clinical lecture.

CASE 1.—On September 27th, 1852, at 4 p.m., I performed extraction on the right eye of Miss J—, a maiden lady who for years had lost the use of her lower extremities from paralysis, and was a great sufferer from rheumatism and neuralgia. The operation was performed under chloroform, but the effect was not satisfactory; though unconsciousness was produced, irritability of the eye remained, so that the eyelids resisted, and the eye was much inverted. Every care was taken not to hurry the section, but there was so much spasm that the lens was shot out, together with some vitreous humor, the instant the flap was completed; the flap was at once adjusted, the lids closed with a strip of plaster, and a light bandage applied. The effects of the chloroform soon passed away, and the patient remained quiet on a sofa.

I happened to be sitting in the room at 8 p.m., whilst the patient lay dozing, when she suddenly sprang up with an exclamation that some one had struck her eye, though certainly nothing of the kind occurred. She was much agitated, and it was difficult to convince her that a blow had not been inflicted. She described her sensation as that of a violent blow on the eye, which had burst it, there being intense pain and a most vivid shower of sparks. I immediately gave her a full dose of tincture of henbane with Hoffmann's anodyne, in camphor water, and she gradually became tranquil; there were slight returns of the spasm during the night, and again during the following day, the sensation being as if the eye were grasped and drawn back into the head, vivid coruscations attending each attack.

The eye was ordered to be soothed with a lotion composed of extract of opium, extract of henbane, and extract of poppy, half a drachm of each to eight ounces of water, and the sedatives were repeated every four hours.

During the week, Miss J— was much tormented with neuralgia of the eye, the brow and the cheek requiring the free use of anodynes; and on the fourth day, the unmistakable cedematous swelling of the upper lid confirmed the opinion I had formed, that serious prolapse of the iris must be the consequence of the repeated spasms and compression of the eye.

On the seventh day, I ascertained the condition to be as follows: The corneal section was widely separated, an extensive prolapse of the iris filling the gap and obliterating the pupil; there was a considerable blush in the eye, indicating the commencement of inflammation. To subdue this, leeches were applied, but ere the day closed my anxieties were increased by an unlooked-for complication, the patient being attacked with violent abdominal spasms and complete stoppage of the bowels, which became enormously distended.

Dr. Hanfield Jones now saw this lady, and was of opinion that the bowels were in a semi-paralytic condition. He prescribed the sixteenth of a grain of strychnine thrice daily, and directed the abdomen to be thoroughly rubbed with an ointment of belladonna and opium. This treatment was attended with the happiest effect; the spasms subsided, and on the third day the bowels

were fully opened, an aloetic purge bringing away a quantity of dark offensive matter.

It is unnecessary to trace the daily progress of the case—it would be a weary detail of suffering extending over many weeks. The neuralgia, which is always present when there is prolapse of the iris was here aggravated by the idiosyncrasy of the patient. Not only was there intense pain in the neighborhood of the eye, but also neuralgia in the back, and even in the lower extremities, which could only be subdued by the liberal use of opiates. No diminution took place in the prolapse of the iris, and deep-seated subacute inflammation gradually extinguished the perception of natural light, though luminous coruscations were a frequent source of annoyance.

At the expiration of two months, finding the corneal flap still projecting like a staphyloma, the gap being filled by the iris I determined to puncture this, to allow the distending fluid to escape, and then to apply a compress. The instant the puncture was made, a jet of fluid was expelled, and the projection sank; but such an attack of spasms, not only of the eye, but of the whole frame, came on, that I was really alarmed; there were cramps in the limbs and spasms in the abdomen, and the patient could only breathe convulsively. I immediately gave a full opiate, combined with chloric ether, and the patient gradually became tranquil. A compress was now applied to the lid, and gentle pressure kept up for a week. Great improvement in the form of the eye resulted, and there was marked relief as regards pain, but the atrophy of the eye and complete extinction of the perception of light, precluded any attempt being made to form an artificial pupil.

CASE 2.—I performed double extraction on a lady advanced in years on the 20th of December, 1856. For many years, she had been a great sufferer from rheumatism and from neuralgia, but this fact was not mentioned till after the operation; on the contrary, I was led to believe that she had enjoyed excellent health. During the operation, there was unusual spasm of the eyes, causing me to complete the sections very slowly. The lens was removed with facility from the left eye, and there was no escape of vitreous humor, but in spite of every precaution, the spasm of the right eye was so strong that the moment the section was completed the lens leaped out, together with a portion of vitreous humor. The flap was immediately adjusted, and time allowed for the spasm to subside. When the eyes were finally closed, both pupils were circular and the irides in their natural position.

This lady passed the following night and day well, but at eleven o'clock on the second night I was sent for, and found my patient in great pain and agitation. She stated that half an hour previously she had given a short sharp cough, and instantly felt a sensation as if the right eye had been violently squeezed, with vivid colors and brilliant sparks. I at once gave her a full opiate, and carefully fomented the eye; the pain gradually subsided, she passed a fair night, and both eyes were going on favorably the next day; but again was I sent for at night, and this time found that a servant had clumsily thrown down a clothes-horse, over which a green baize had been thrown to exclude the light of the fire. The patient awoke in great alarm, and was seized with violent spasms and scintillations in both eyes.

This was sufficient to convince me that there would be trouble here, and my expectations were fully realized; for though there ensued but little œdema of the lids, and but a moderate amount of neuralgic pain, seven weeks elapsed before I was able to obtain even a glance at either eye. The slightest attempt to raise the lid produced such a spasm that I was compelled to wait patiently until the irritability subsided, for subside I knew it would in time. My patient was a very peculiar and intractable person; so that, on the whole, I never remember a more trying case. And what was the result? Slight prolapse of the iris in the left eye, but good pupil and fair vision, which is steadily improving. The section in the right eye united, but the pupil was closed, and the globe has somewhat diminished in size. To have saved one eye, under the circumstances, was almost more than I expected, for my instructions were seldom obeyed by the patient. For instance, I had prescribed some medicine to be taken twice in the day. The following day I asked if it had been taken as

directed. "Why, no," was the reply, "I did not like the trouble of taking two doses, so I took the whole quantity at once!"

CASE. 3.—On October 21, 1856, I performed extraction in this hospital on the right eye of Mrs. G.—, and removed without difficulty a remarkably dense capsulo-lenticular cataract; for four days she progressed well, but on the fifth she happened to be asleep when I entered the ward, and the nurse abruptly woke her. Startled, she jumped up hastily, and immediately complained of her eye, which seemed (she said) violently squeezed, and pulled back in her head. The occurrence vexed me, knowing the probability of the section being disturbed; but I directed that the eye should be well and carefully fomented, prescribed a sedative draught, and desired the patient to keep perfectly quiet. Nevertheless, the lid began to swell, with the sensation as if a pea were under it—unmistakable indication of prolapse. On the seventh day I examined the eye, and found large protrusion of the iris, and considerable inflammation. Six leeches were applied with marked relief, and frequent fomentation ordered, and in the course of a few days the redness subsided. The eye was kept almost constantly closed for a month, and the prolapse was twice touched with nitrate of silver; some irritation followed the second application, and it was not repeated. Belladonna was used, and gentle pressure by means of a soft compress and bandage was applied with some advantage; but notwithstanding all my efforts, the iris did not retreat sufficiently to admit of the pupil recovering itself, and useful vision was for a time suspended. I say suspended, because in this case there was not sufficient inflammation to permanently injure the eye, and the closure of the pupil was the only obstruction to sight. Here an artificial pupil can be made with great facility, and there is little doubt of vision being restored.

Commenting upon these cases, Mr. Cooper says:—

"The symptoms of spasms of the muscles of the eye are, sudden acute grasping pain, with a sensation as if the eye were drawn back in the socket, generally attended with coruscation of light and colors, the result of compression of the retina. In the majority of cases it comes on within the first thirty-six hours after operation, generally during the brief interval between sleeping and waking, or just when the patient is dropping off to sleep, and is most marked in persons who have suffered from disturbance of the nervous system, as indicated by neuralgia, spasms, and cramps.

"The immediate indication is to tranquillize the nervous system, and this object is best attained by a soothing cordial draught, composed of thirty drops of Hoffmann's anodyne, twenty drops of Squire's solution of bimeconate of morphia, and a drachm of the compound tincture of lavender in an ounce of water. In some cases I have given six or eight drops of the tincture of Cannabis Indica on a lump of sugar with excellent effect. The most grateful application to the eye itself is a fomentation of hot water, but in using this the utmost gentleness is necessary, the irritability of the eye being so great that a very slight touch will often bring on a return of the spasm. For the same reason, it is preferable to darken the room, thoroughly excluding the light from the patient, rather than to irritate the eye by compressing it with bandages. And here let me give you a hint: never allow a looking-glass to remain in the patient's room. I have several times known much annoyance caused by a gleam of light falling on a mirror, and reflected to the patient's face; for the same reason have any chinks in the shutters stopped up; more mischief may be done by a bright ray of light streaming through a crevice, than by a considerable amount of general light, gradually admitted.

"It must be borne in mind that, for the better illustration of my subject, I have selected the most marked cases in my note-book. It by no means necessarily follows that destruction of the eye should follow spasms of the muscles; the immediate effect will almost certainly be disturbance of the section and prolapse of the iris. The prolapse may, however, subside, or not be sufficiently great to interfere materially with the success of the operation; or again, if the prolapse be so considerable as to cause obliteration of the pupil, vision may still be restored by an artificial pupil.

"Prolapse of the iris will be indicated by a slight oedematous swelling, com-

mencing at the inner canthus, and stealing along the margin of the upper lid; the lid becomes exquisitely tender, so that the patient shrinks from the slightest touch, and there is generally the sensation of a foreign body under it. There is a copious discharge of scalding tears, the patient avoids light, and the slightest movement of the lid. If you do manage to raise the lid, you will find the cornea thrown upwards, and there will be more or less redness of the conjunctiva and sclerotic; simultaneously with these local indications the patient will complain of aching over the brow, extending down the side of the nose and cheek-bone, which is tender to the touch; the pain is aggravated at night.

"The treatment which I believe to be best for prolapse of the iris is, first and above all, absolute quiet of the eye; the least handling or attempt to open the lids almost certainly brings on a return of the spasm, and of course keeps up the mischief. The object we should steadily keep in view is, to allow the iris to recover its position, and the section to become firm. The utter inability to raise the lid points out that Nature requires it to remain closed, in order that she may perform her work.

"It is generally recommended that the prolapse should be touched with nitrate of silver. In some cases I have seen this useful, in others hurtful; and on the whole, I am of opinion that time and quiet will attain the great object better, and with less hazard than the use of the caustic. I remember a case which I assisted the late Mr. Dalrymple. Three weeks after extraction the eye remained irritable, there being a small prolapse, but sight was returning favorably. Wishing to hasten matters, Mr. Dalrymple touched the prolapse with caustic; violent pain came on, subacute inflammation followed, and the eye was lost. I believe that he used caustic no more in such cases.

"Time and quiet, then, are the main agents in the cure of prolapse of the iris; when the cicatrix is forming, advantage may be derived from the use of belladonna; and if there be congestion, the application of a leech or two from time to time will be serviceable. There is one thing, however, which we are called upon to ameliorate, and that is the frontal neuralgia. An ointment, composed of one drachm of extract of opium to four drachms of strong mercurial ointment, well rubbed in at night, is often efficacious; but I have found still greater relief afforded by painting the painful surface freely with a lotion composed of one grain of nitrate of silver dissolved in half an ounce of nitric ether. This sometimes acts like a charm in removing the pain. Another useful application is chloroform thus applied: a layer of cotton-wool is to be spread over the forehead, then sprinkled with chloroform, and covered with oiled silk. The vapor is thus confined without coming in contact with the skin.

"There is a point in the after treatment of cataract cases to which I would draw your attention—namely, the importance of avoiding any sudden startling of the patient, especially from sleep; as I look back upon the cases in my practice in which there has been prolapse of the iris, I may ascribe this mainly to two causes—the eye being struck, or the patient being startled. It is not necessary that there should be a real blow, a mere touch will be sufficient to cause a sharp action of the muscles of the lids and of the eye, and so the flap may be displaced. When, therefore, the eye is being cleansed, the patient should always be warned when the sponge or rag is going to be applied; for if not so prepared, a start will generally take place, and the eye may be struck.

"I have described in Case 2 the consequences of an alarm caused by the clumsiness of a servant. Impress upon the attendants the importance of quiet, and the most rigid attention to your instructions. These must be laid down with precision, especially when you have not the assistance of a nurse experienced in the management of eye cases."

ART. 90.—*Opacity of the Cornea removed by Operation.* By Dr. AGNEW, Surgeon to the New York Eye Infirmary.

(*New York Journal of Medicine*, Sept., 1857.)

CASE.—"P. K.—, a German, æt. 41, came under my care, at the New York Eye Infirmary, in April, 1856, for superficial opacity of both corneas.

"He stated that, fourteen weeks previously he had had his face and eyes burnt by the explosion of a gunpowder blast, that his vision was not materially impaired at first, but that it began to fail on the occurrence of inflammation, and continued to diminish until, at the expiration of three months, perception of sight alone remained. During the progress of the inflammation various collyria were employed, and when using a solution of acetate of lead, he became rapidly blind.

"Up to the day of his admission into the infirmary he had constantly suffered from photophobia, lachrymation, and a continued sense of ocular distress, which at times amounted to severe pain, and spread to circumorbital parts.

"Rest and consequent recovery from the fatigue of his recent journey, enabled us, on the day following his admission, to make a careful inspection of the eyes. Upon the centre of each cornea was a white enamel-like, circular patch, which, diminishing in opacity towards its periphery, disappeared in a narrow setting of transparent cornea, about a line in breadth. The patches reflected light quite brilliantly, and a thin substance seemed to be deposited beneath the epithelial layer, and either external to, or embedded in, the external elastic lamina.

"With the assistance of atropine, we could observe, by an oblique glance, that the pupil was free in both eyes, and largely dilated. There was considerable zonular vascularity, and conjunctival redness, both of which were increased by the efforts made to expose the globe.

"As the opacity seemed to be superficial, and no hope could be entertained of procuring its absorption by topical or general medication, I determined to resort to an operation.

"The patient was accordingly placed in a supine position, and profoundly etherized. The right cornea was then exposed by means of a spring speculum, and motion of the globe anticipated by a grasp upon the conjunctiva with a pair of forceps. With a Beer's knife I first scraped off the epithelium, which proved to be the covering of the opacity, and the occasion of its lustre, and then, by a scraping and picking motion, attempted the removal of the foreign substance. From the centre of the cornea, a white scale nearly a line square was removed by an easy motion of the knife, disclosing a transparent cornea.

"The removal of the patch increased in difficulty as we approached its periphery, where the particles of earthy matter seemed to be glued together, and to the external elastic lamina, by lymph or thickened epithelium. Especial difficulty was encountered in endeavoring to pare away the opaque substance from the margin of a little pit, in which still rested the insoluble débris of a granule of powder. We were much pleased to find our scraping rewarded, however, by a tolerably clear view of the iris. The same procedure cleared the left cornea of a similar opacity.

"On the patient's returning to consciousness, he complained of greatly increased photophobia, a condition now easily explained by the absence of the corneal epithelium.

"The closure of the eyes by strips of adhesive plaster, and confinement in a darkened room, relieved the patient of the photophobia.

"No symptoms indicating interference occurring, the eyes were kept closed, and occasionally bathed with tepid water, until the fifth day, when, on removing the adhesive strips, the corneae were found glistening as if covered by epithelium, and free from any considerable opacity. Where the periphery of the patches had been, was a faint line of a bluish-white color, and in one or two places over the general corneal expanse, there were little specks, but not amounting in the aggregate to any serious obstruction of vision as was evinced by the patient's ability to read the text of an ordinary German Bible.

"Three months from the date of discharge from the infirmary, which happened ten days after his admission, I received a letter signed by him, but written by his employer, in consideration of the inability of the former to write English, in which he says that his eyesight is not only sufficient for the ordinary purposes of a farm-life, but such as enables him to read with ease.

"The scales and scrapings were kindly and carefully analyzed by Professor Doremus, who reported an entire absence of signs of lead, but unequivocal in-

dications of the presence of an earthy salt; which evolved, under the action of an acid, carbonic acid."

ART. 91.—*On the Diagnosis of Obscure Forms of Ocular Congestion.* By Dr. QUADRI.

(*Annales d'Oculistique*, tome xxxvii.; and *Medico-Chir. Review*, April, 1857.)

The diagnosis in obscure internal ophthalmias is often very difficult, and may lead to their being mistaken for purely nervous affections. Dr. Quadri cites a case in point in which the ophthalmoscope exhibited the retina in a normal state, and in which the absence of all symptoms of inflammation would have justified him in pronouncing a simple neurosis, when, happening to see the patient as soon as he awoke, he observed a very marked pericorneal injection, like that seen in iritis, and which at the end of an hour had disappeared. The same thing occurred the next day, and, in fact, the case proved an example of iritis, which was cured in the usual way, but the existence of which was indicated by no other symptom. In the normal state of the eye we observe only congestion of the superficial network of the conjunctiva on awakening; but the deeper-seated vessels are not engorged, unless they have become dilated as a consequence of disease. The observation of the eye at this hour may thus be of great utility in obscure cases.

ART. 92.—*Passage of the Nasal Sound or Catheter.* By Mr. MARTIN, Superintendent of Calcutta Eye Infirmary.

(*Indian Annals of Med. Science*, April, 1857.)

The cases here related are sufficient to show that there are instances of disease of the excreting lachrymal passages in which the use of the nasal sound or catheter may render great service. Nasal catheterism is however a delicate and often difficult operation, and is capable of producing great mischief, when employed in unsuitable cases. It is a matter, therefore, of considerable importance to distinguish between the cases in which it is indicated, and the reverse.

"It seems to me," says Mr. Martin, "to be indicated in cases of chronic disease, in which there is partial or total occlusion of the nasal passage; the original disease, which has generally been acute or chronic inflammation of the sac or upper part of the canal having been subdued. In the majority of such cases, long after all acute action has subsided, there remains a fulness at the inner canthus of the eye; this fulness becoming, if fluid is allowed to accumulate, a tumor in that situation, remaining until the fluid is forcibly evacuated by pressure; in many cases the fluid can only be pressed in an upward direction; if it will pass both upwards and downwards, it is fortunate, for in that case the obstruction in the nasal passage cannot be complete, and is, most probably, capable of amendment. However, even if we find that the passage is totally obstructed, we may expect to do good by passing the catheter, and pressing with it with slight force at the point of obstruction, which will generally be about the commencement of the *ductus ad narum*, below the lachrymal sac. Any pressure will probably produce some discharge of blood from the passage. I have not found this injurious. In acute cases of dacryocystitis, an occurrence of the kind would be to be deprecated, as it might aggravate the inflamed state of the mucous membrane; but in chronic states, where a considerable portion of the mucous membrane is thickened and congested, it is probable that a flow of blood from the lower aperture may do rather good than harm; at any rate, experience convinces us, by numerous examples, that, in cases of chronic disease, the discharge of blood does no harm: in most instances, on the next trial of the instrument, it has been found that the obstruction is less firm, and, probably, that the passage has been opened; nor has there been any increase of the slight irritation which is generally caused by the introduction of the instrument along the passage. There seems to be *great analogy* between stricture of the nasal passage and stricture of the urethra, and they may be treated in a similar way; in both a dilating instrument

may be used to open or enlarge a passage, and, although sometimes much irritation is caused, it is necessary to persevere in the occasional use of the instrument. I generally pass the sound after the interval of a week or two, and retain it in the passage for at least a quarter of an hour at a time. There is, however, one important difference between the same disease in similar structures. Where the urethra is strictured, even although there may be an inflamed state present, it may be necessary, at the risk of causing great pain and irritation, to secure a passage: in cases of stricture of the lachrymal passage it is not by any means an absolute necessity, and this gives us a great advantage in the treatment of the latter affection over the former. We can afford time to wait, until the acute action has all left the parts, before we try to re-establish the patency of the canal; in fact, if we were to attempt to pass a sound during the stage of action, we should not only fail in almost every case, but we should, most probably, increase the inflammation, and cause injury which might lead to caries or other disease of the bony structures surrounding the canal. Even if we could succeed in opening a passage, the inflammatory action going on would cause it to be closed again almost immediately. The operation, therefore, seems to be contra-indicated in all those cases of acute inflammation in which any part of the lachrymal excreting passages are involved, and which generally lead to fistula lachrymalis, to mucocoele, to dropsy of the sac, &c.: but, when these results of inflammation exist, either with or without the coincidence of chronic inflammation, it will generally prove beneficial. I have found it useful even in those cases where an irritable state of the mucous membrane exists; there having been originally inflammation. This having been subdued, the membrane is left in such a condition that acute action is readily set up, sometimes periodically, at others by a change of weather: cold and damp particularly affect it; while this lasts, the patient is much annoyed by the obstruction of the canal, which causes mucous tears, &c., to collect about the inner canthus: in such cases, it will be found the best practice, after premising some treatment for reducing the acute action, to try to restore the patency of the passage. If we succeed once in doing this completely, there is much less chance of any acute inflammation causing total obstruction again; and, as the mucous membrane through the whole length of the canal will be restored to a comparatively healthy state if appropriate treatment be persevered in for a considerable time, the original disease may be cured. Of the beneficial effect of operative treatment in these cases, I had a very good example, in the case of an officer who had been some years subject to the disease, and who came under my care, having been obliged to leave Burmah, where he was serving with his regiment, on account of the extreme annoyance caused by frequent attacks of acute dacryocystitis, and the result—almost total occlusion of the nasal passage. The nasal sound was passed at intervals during a space of two or three months; at the end of which time he was, if not quite cured, so much relieved, that there was no reason to anticipate any return of the irritation. In the early period of the treatment, he felt much uneasiness during the passage of the instrument, and blood flowed from the membrane. This, however, did not cause any mischief nor protract the cure. The sound, having been passed up to the sac, was allowed to remain some time as usual on each occasion.

"As regards the operation, it may be stated that it is by no means an easy one at all times. The instrument I use is similar in shape to that described as Gensoul's sound; independent of the stricture, which may be as low as the lower opening of the duct, the difference of configuration of the bony parts surrounding the canal, in different individuals, of the inferior spongy bone, &c., makes it difficult to pass it sometimes; in fact, great practice is required before facility in passing the instrument is gained by the operator; and it is advisable for all students and young practitioners in ophthalmic surgery to practise the operation of passing a sound along the passage. In the want of a regular nasal sound, a common probe, strong, and with about an inch of one end bent at right angles, will answer the purpose with the dead body. In passing the sound in the living subject, the student should be warned against continuing

any attempt to pass it, if pain results, as it is most likely, in that case, he has not hit upon the right passage, and much mischief may be done.

"I am not aware that, in cases of obstruction of any part of the lachrymal canal, any other operative procedure will be found advisable; and I believe much mischief may be done, without, as far as I know, any benefit whatever accruing, from the use of instruments designated as puncta probes, &c., which are sometimes passed through the very delicate and easily lacerable passages at the superior part of the lachrymal canal."

CASE.—John R—, æt. 30, in-patient, 7th March, 1856. Acute dacryocystitis has existed for the past year. Muco-purulent discharge, canals not perfectly closed. Pil. Hydrarg.; hirud.; blister, astringents, &c.

May 14th.—No inflammation—less discharge, canal partly open. To-day the nasal sound was introduced, could not pass it as far as the sac; it was retained for a few minutes.

17th.—There has been no discharge or irritation.

23d.—To-day the nasal sound was introduced; passed through obstruction—still stricture.

26th.—Passage of tears and mucus through nostril more than before.

30th.—Now no discharge, daily improving—in the end discharged cured.

CASE.—Golam Nubbee Khan, æt. 40, in-patient, 8th April. Dacryocystitis of some standing; abscess over sac most in left. Abscess opened; hirud., &c. Mercurials, alteratives, &c.

June 21st.—To-day the nasal sound was introduced.

23d.—Passage more open.

July 3d.—To-day the nasal sound was introduced; some stricture exists.

10th.—Passage more open.

12th.—Left hospital cured.

CASE.—Buxoo, æt. 25, in-patient, 7th March, 1856. Chronic dacryocystitis; abscess over sac, obstruction of canal. Depletion, blisters, &c.

May 20th.—No acute action. To-day the nasal sound was introduced up to stricture.

June 28th.—To-day the nasal sound was introduced; less obstruction.

July 8th.—To-day the nasal sound was introduced.

28th.—Says there is no obstruction to passage of fluid; discharged, relieved.

ART. 93.—*Two cases of Prolapsus Linguae.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, June, 1857.)

CASE 1.—"A girl, twelve years of age, who was recommended to my care by Dr. David Arvott, of Arbroath. The prolapsus had existed from the time of birth, and attained so large a size that its remedy seemed impracticable without removal of the redundant portion. I therefore performed the operation by means of a Λ -shaped incision, tied the bleeding vessels, and united the cut edges by sutures. The wound healed without any bad consequences; but, to my great surprise, in the course of a short time, the tongue had resumed, to the full extent, its bulk and form, so as apparently to be in no respect different from what it had been previously to the operation. The tumor was then moistened with a strong solution of the sulphate of copper, and subjected to the pressure of a bandage, under which it gradually diminished in size, so as to be reducible within the mouth. But when the prospect of a satisfactory result was thus so favorable, the patient, from being unfortunately exposed to cold, suffered an attack of laryngitis, which speedily proved fatal.

"The experience thus acquired naturally led me, in accordance with the opinion of Lassus, to regard excision as improper, and compression as the preferable remedy; but no opportunity of acting upon this principle presented itself until last year."

CASE 2.—"R. M—, æt. 15, recommended to my care by Dr. Malcom, of Perth, was admitted into the hospital on the 4th of March. The tongue was said to have been unnaturally large at the time of birth, and to have afterwards, increased, especially at the period of teething, and more recently after an

attack of scarlatina. It was of a globular form and brownish color, with irregular elevations on the surface, and a painful ulcer at one part from the irritation of the teeth.

"A strong solution of sulphate of copper—one scruple to one ounce—having been applied on lint, the tongue was compressed by a bandage; and the following measurements, which were carefully taken by my late house-surgeon, Dr. Marshall, will show the progress of diminution:—

MEASUREMENTS.

March 7th,	circumference	8 inches,	length	2½ inches.
" 8th	"	7	"	2¼
" 9th	"	6½	"	2¼
" 10th	"	5¾	"	2¼
" 11th	"	5½	"	2¼
" 12th	"	5	"	2
" 13th	"	4¾	"	1¾
" 14th	"	4½	"	1¾
" 15th	"	4½	"	1¾
" 16th	"	4¼	"	1¾
" 17th	"	4	"	1¾

"March 22d.—Bandage and lotion continued. Tongue now projects one inch only from the incisors, but the circumference remains the same.

"April 1st.—Projection reduced to half an inch; circumference the same. Is able, with an effort, to close his lips over the tongue.

"On the 14th April, as no further change had taken place, and as the tongue could not be retained within the mouth, except by a voluntary effort of the lips, from the lower jaw being so much altered in form as to prevent the teeth meeting sufficiently to do so, I removed the small redundant portion by means of curved scissors applied transversely. Two vessels having been tied, the edges of the wound were stitched together. No bad consequence followed, and the patient was dismissed cured on the 18th of May.

"In reply to a letter requesting Dr. Malcom to acquaint me with the patient's subsequent progress, I received the following account:—

"Perth, 14th January, 1857.

"My dear Sir,—Shortly after the receipt of your letter I visited the boy M—, at Forteviot, upon whom you operated for enlarged tongue. He has grown to be a fine tall young man, and is working with his father in a quarry, where he was employed when I called for him. He speaks and reads very distinctly, only with a lisp, but not more than hundreds of people in the world. I examined his mouth, and especially the lower jaw; the teeth meet to the first grinders, and then are separated. I told him that it was at your request I examined him; and he said that he finds that his front teeth are gradually approximating, and that the upper and lower jaws are daily much nearer each other. When I first saw him, and before your operation, he had a constant flow of saliva from his mouth; there is nothing of the kind now; he eats and drinks with perfect ease. Some relations of his, from a distance, came to visit his parents at the holidays, and, upon seeing him, did not know him.

"As the lower jaw is so much disposed to approximate the upper jaw, I recommended him to persevere and wear an apparatus on the chin, from the top of the head, which, by constant pressure, would assist this effort of Nature in completely restoring the symmetry of the face, now that the cause of deformity is removed. It is only by the front face that you can see that there is any peculiarity in his appearance; his profile is perfect.

"Professor Syme."

"Yours very sincerely,

"WM. MALCOM.

"From what has been said, I think it will appear that Lassus was right in regarding compression as the most expedient means of correcting *prolapsus linguae*; and that even when, from the long duration of the disease, with con-

sequent difficulty of replacement from alteration in the form of the jaw, it may be found requisite to curtail the organ, this should not be done until the tongue has, so far as possible, been reduced to its natural size. The incision will thus be limited to the smallest extent, and the texture concerned will be in the most favorable condition for healing."

ART. 94.—*On Ligature of the common Carotid Artery.*

By Dr. JAMES R. WOOD, Surgeon to the Bellevue Hospital, New York.

(*New York Journal of Medicine* July, 1857.)

In this paper Dr. Wood relates the particulars of nine cases in which he tied the common carotid, and he refers, at greater or less length, to no less than thirty-nine unpublished cases of the same operation occurring in the practice of New York surgeons.

In these cases the artery was tied for the following reasons:—

Hemorrhage.—Whole number, nine; of which six recovered and three died.

Cause of death.—Two became hemiplegic: one, a few hours after the operation, dying comatose, no autopsy; the other, on the second day, also dying comatose, and revealing, on post-mortem examination, softening of the brain and inflammation of the pleura. One died on the eleventh day, and, on examination, was found to have had pericarditis with collections of pus in apex of lung and liver.

Malignant disease of head or face.—Whole number, seventeen, of which four resulted in the apparent cures of the original disease; ten were decidedly benefited, growth of tumor being for a time arrested; two died; one not noted.

Cause of death.—In one, hemiplegia supervened twenty-four hours after operation, and death occurred in sixty hours; autopsy revealed extensive softening of the brain; in the second case, death occurred three or four days after the operation, from exhaustion.

Aneurism by anastomosis.—Whole number, ten; of which four were cured; one died; five were benefited.

Cause of death.—In the fatal case, phlebitis was found to have existed, pus found in cavity of deep jugular vein.

Aneurism of branches of carotid.—Whole number, four; all recovered.

Epilepsy.—Whole number, two; both benefited, but not cured.

Removal of tumor.—Whole number seven; all recovered.

Secondary hemorrhage occurred in five instances, slightly in two, and severely in three; all recovered, the hemorrhage being controlled by pressure.

Date of separation of ligature was noted in twenty-four cases—maximum period, thirty-one days; minimum, nine days; average, fifteen days.

ART. 95.—*On the Treatment of Goitre by the application of Binioidide of Mercury Ointment and Exposure to the Sun.* By CAPTAIN CUNNINGHAM.

(*Indian Annals of Med. Science*, April, 1857.)

The extraordinary statements which we here reproduce from the pages of our able Indian contemporary, are contained in a memorandum signed by Major Holmes, the officer commanding at Segowlee, and communicated by Dr. Mouat, the Inspector of Gaols and Dispensaries in Bengal.

The part of the memorandum which concerns us runs thus:—

"In the districts about Motiharee, Segowlee, Bethiah, Bhagoh, and on to Goruckpore, indeed along the whole line of the Teraie, the goitre is so prevalent that it can scarcely be an over-estimate to state that, in many localities, one individual in ten is afflicted with this horrible disorder.

"In some cases, the tumor attains a certain size, and passes into a chronic state, without serious inconvenience to the person affected; in others, it increases rapidly, and, at the end of a few years, after becoming an enormous excrescence, terminates in loss of intellect in some cases, and in others in death.

"In the cold weather of 1854-55, Captain Cunningham, second in command,

12th Irregular Cavalry, began to apply the biniodide to the goitre in the following manner.

"An ointment was prepared according to a formula, as follows:—

"Melt 3 lbs. of lard or mutton suet, strain and clean; when nearly cool, add 9 drachms of biniodide of mercury, taking care to make the powder fine by trituration in a mortar.

"Work in the mortar until no grains of red are apparent in the ointment, and put in pots for use, taking care always to keep both powder and ointment from the rays of light.

"Use as follows:—

"About an hour after sunrise, apply the ointment to the goitre with a spatula made of ivory or thin broad smooth bamboo, quantity according to size of tumor—rub it well in for at least ten minutes. Let the patient then sit with his goitre held well up to the sun, and let him remain so, as long as he can endure it.

"It is probable that about noon he will suffer severe pain from the blistering effect of the ointment, though no pustules are raised on the skin. About 2 P.M. the ointment should again be applied with a very careful and tender hand, and the patient should be dispatched to his home, with orders not to touch the ointment on any account with the hand, but to allow it to be gradually absorbed, which absorption will be complete on the third day.

"This treatment is quite sufficient for an ordinary cure. Should the case be a very bad one, the patient is ordered to return next year for the removal of what may remain of the tumor. Except in goitres of the very largest size, this is seldom necessary. After the application of the second year no goitre has been known to continue.

"The patients begin to come about the middle of November, and continue to the end of March: after that time the sun's rays act so violently on the medicine that it is not advisable to apply it.

"The cures effected have been very numerous. On my arrival at Segowlee, I was glad to join Captain Cunningham in this good work; but with him rests all the credit of having established it.

"The cases are not now so numerous as they were in 1855. At that time 500 or 600 were not unfrequently treated in a single day; a small charge of 2 pice for each cure was levied for some time, in order to make the people set more value on it; but, as this seemed to check some patients, it was discontinued.

"Until lately, no exact account of the numbers treated has been kept: but since Captain Cunningham commenced, up to the present time, it cannot have been less than 60,000. Many come from a very great distance, Goruckpore, Mozufferpore, Mulaye, but the cases in the vicinity are decidedly less numerous—in fact the disorder is being extinguished. In no case, except one, have we failed to make a complete cure during the second year."

Appended to the memorandum are also some answers to certain queries proposed to Captain Cunningham by Major Holmes. The captain says:—

"1st. In the cold weather of 1854-55, I must have treated (I should say) upwards of 20,000 goitre people, or rather 25,000; and, in one day, I have seen as many as 500 at my house, who were all treated.

"The people came in such great numbers, that (after giving the medicine free at first) I made each person pay 2 pice (Goruckporee, of which there are from 100 to 106 in the rupee), and actually collected rupees 160 in this manner. This alone proves 16,000 to have been treated; besides which, all those who came back a second and third time, and very many did so, had not to pay again; besides which a great number were treated before I commenced making any charge.

"So I cannot be wrong in putting down the whole number for the year at from 20,000 to 25,000.

"2d. From what the people have told me, and from the state in which I have seen some with enormous goitres (breathing with a noise like a broken-winded horse), I have reason to suppose that the increased size of the goitre does prove fatal in not a few cases; as, when so enlarged, it prevents the person afflicted

with it from using any exertion, and, as I have been told, even from eating and drinking without extreme difficulty, which I can easily believe.

"3d. I have seen many cases of goitre patients whose intellect was decidedly affected by the disease, I should say, as, after the goitre was reduced, they appeared much more intelligent and like rational creatures, which they were not before. However, there are so many idiots about this part of the country only slightly affected with goitre, that it would be difficult to say whether idiocy was actually induced by it, or the symptoms increased in those whose intellect was naturally defective.

"4th. To my certain knowledge the biniodide of mercury did fail in one case to effect a cure. I applied it myself seven or eight times on one man, and was particularly careful in seeing that he did not rub it off, but it did not act upon him, which I could not account for. In old cases, where the goitre has become as hard as a stone, and about the size of a turkey's egg, I have found it fail; but, when the flesh is soft, I have seen the goitre wonderfully reduced, and I have no doubt but that it would be removed altogether were the people only to continue the application, which, however, they seldom do, owing to the great pain it causes.

"5th. I have never heard of any instance in which danger arose to the patient from application of the biniodide of mercury, though a man did come to me with sores on his neck, which he said had been caused by the medicine a year and a half before, but since then I have seen another man with similar sores, which the doctor said were scrofulous, and he never had the biniodide applied to his neck."

ART. 96.—*On Plastic Operations upon the Face and Neck.* By MR. TEALE, Surgeon to the Leeds General Infirmary.
(*Pamphlet*, Churchill, pp. 32, 1857.)

In this pamphlet Mr. Teale describes several clever operations for restoring the lower lip and for relieving certain deformities in the face and neck, and at the same time he relates six cases in which these operations were successfully put in practice. The nature of these operations and their importance will appear from the following quotations:—

"1. *Operation for the Restoration of the Lower Lip.*

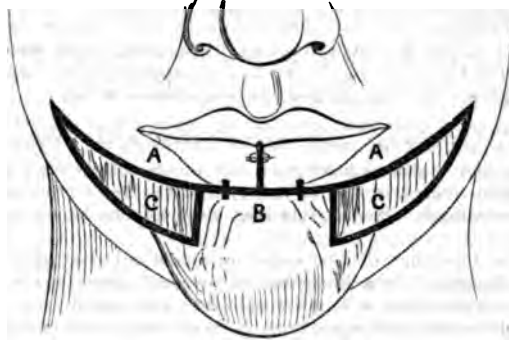
"The usual cause which renders this operation necessary is the contraction following deep and extensive burns of the neck. As contraction advances, the chin becomes drawn down to the sternum; the mucous membrane of the lower lip is turned outwards, and drawn to the lower edge of the chin; the incisor teeth of the lower jaw gradually assume a horizontal direction, and are drawn much in advance of those of the upper jaw. In extreme cases the lower incisors take a direction almost horizontal. The saliva is constantly dribbling away, and the tongue sometimes lolls out of the mouth.

"To relieve this sad condition the following operation is proposed:—



A A. Lateral flaps formed of everted lower lip and cheek.
B. Central portion of everted lower lip.

"Two vertical incisions, about three-quarters of an inch in extent, are made through the everted lip down to the bone. These incisions are so placed as to divide the upper portion of the everted lip into three parts—the middle being equal to one-half of the natural breadth of the lip, while the two lateral portions are each equal to one-fourth. From the lower end of each vertical incision the knife is carried in a curving direction outwards and upwards to a



A A. Lateral flaps united in the median line above the central portion of everted lower lip B. C C. Exposed surfaces left to granulate.

point situated about one inch from the angle of the mouth opposite to the second molar tooth of the upper jaw. The two flaps thus marked out and deeply incised are then separated from the bone, the mucous membrane uniting them to the alveoli being freely divided. Lastly, a bare surface is made along the alveolar border of the middle portion of the everted lip. The incisions being now completed, the lateral flaps are drawn upwards and united by twisted sutures to each other in the median line, and to the middle portion of the everted lip at their inferior border. In this way a new lip is, as it were, built upon the middle portion of the old one.

"2. Operation for Restoration of the Upper Lip.

"The process of cicatrization sometimes reduced the upper lip to a narrow transverse band, drawn up close to the nose, leaving the upper teeth and gums exposed. This deformity interferes with the perfect closure of the mouth, and causes an unseemly aspect.

"The contracted upper lip in the fifth case of the present series was restored to its natural size and function by the following operation :—



"A crucial incision is made (*en saltire*), having its point of intersection immediately below the septum of the nose. Each limb of this incision is about one inch and a half in length. The two limbs on each side diverge moderately as they pass outwards to the cheek, and inclose between them an acutely angular flap of skin and other tissues. This crucial incision is extended deeply through the entire substance of the imperfect lip and the cheeks. The parts implicated in the incisions are then freely loosed from their attachments to the superior maxillary bone by the knife being passed upwards between the bone and the remnant of lip. The parts being thus detached, the two lateral angular flaps are drawn across the medium line, dove-tailing with each other, and thereby increasing the depth of the lip at the expense of its breadth. In this position the flaps are retained by one pin and twisted suture.

3. Operation for relieving contractions of the Neck.

In some cases the contraction of the neck is so great that the head is bowed forwards, the chin drawn to the sternum, and the lateral movements of the neck greatly restrained. These evils may generally be much mitigated, and sometimes completely relieved by plastic surgery.

"In 1839, Mr. Carden,* of Worcester, operated upon a girl, *æt.* 14 years, who was much deformed by a burn, which occurred seven years before. The movements of the head were much restricted: the mouth was permanently open, the tongue protruded, the lower incisors projected horizontally, and there was constant dribbling of saliva. A transverse incision was made throughout the entire extent of cicatrix in front of the neck. The chin was then drawn upwards, and every tense band connected with the cicatrix was divided, until the head was relaxed nearly into its natural position. A flap of skin, three inches long and two inches and a half wide, was detached on each side from over the clavicle and chest. These were raised and united in front of the throat. The degree of improvement effected in this case, and tested by the lapse of four years, was highly gratifying.

"Subsequently to the performance of Mr. Carden's operation, a similar proceeding was adopted in several cases, with great success, by Dr. Mutter,† of Philadelphia.

"I have performed this operation in seven cases since August, 1848, and have witnessed it in some others by my colleagues at the Leeds Infirmary.

"In all the cases which I have seen there has been a marked and most satisfactory improvement in the movements of the head and neck. The displacement of the lip was also in a greater or less degree mitigated by the operation on the neck, but in several of the cases this particular deformity remained to such an extent as to render a special operation for the restoration of the lower lip subsequently necessary.

"In these autoplasmic operations on the neck it is of essential importance, as stated by Dr. Mutter, that the incision of the scar should extend from sound skin on one side of it to sound skin on the other, and that every band of adventitious fibrous tissue beneath the scar should be divided until the bottom of the wound discloses a loose healthy cellular tissue.

"The flap to be transplanted may be taken from any neighboring portion of the neck, shoulder, or thorax, where healthy skin can be obtained. In some cases, however, from lack of sufficient sound skin, I was under the necessity of including cicatrized skin in the flap.

"The very accurate adaptation of the flap by suture should be avoided, as great tension renders the flap liable to slough. It is, therefore, better to be content with attaching the flap only at its free extremity and one of its borders, and to leave the other border loose. Much may be done afterwards by careful dressing, during the healing process, to rectify any separation of the parts.

"As far as I have observed, the transplanted flap rarely unites to the edges of the wound by the 'first intention.' All that is usually accomplished in the

* "Transaction of Provincial Medical and Surgical Association," vol. xii.

† "British and Foreign Medical Review," April, 1845.

first instance is an organic union of the cellular surface of the flap to the parts beneath. The more close approximation of the edges of skin is obtained during the processes of granulation and healing.

"When the bands of scar are so numerous or extensive as to require more flaps of skin than one to be inserted, it is better to repeat the operation at separate times. I saw much constitutional disturbance in one case from the operation having been conducted on too large a scale in the first instance.

"After the lapse of some months the transplanted portion of skin is generally found to have yielded to a process of stretching, so as to exceed considerably its original dimensions.

4. *Operation for Restoration of the Lower Eyelids.*

"Eversion of the lower eyelid, its tarsal border being drawn far down the cheek, is a frequent result of contracted scars. Besides the revolting appearance caused by permanent ectropion, the patient suffers habitually from a low form of inflammation of the conjunctiva and cornea, in consequence of these parts having been habitually deprived of the protection of the eyelid.

"The eyelid in such cases may frequently be restored to its natural position by the following operation:—

"An incision is made across the cheek parallel to the displaced tarsal border, about three lines below it. The portion of skin between this incision and the edge of the tarsus, along with the whole substance of the eyelid as far as the edge of the orbit, is freely dissected upwards. The eyelid, thus loosened, is placed in its natural position, and the chasm left thereby is filled by a piece of skin transplanted from the side of the face. This operation succeeded perfectly in the right eye of William Bradley, the subject of the fifth case. It was attempted with only partial success in both eyes of John Leach, the subject of the fourth case. The want of complete success, in this instance, was owing to the total absence of any portion of sound skin in the neighborhood; on which account I was obliged to transplant on each side a piece of cicatrix, which, having only low vitality, sloughed to a considerable extent. In two other cases, not included in this series, the operation succeeded perfectly.

5. *Restoration of the Upper Eyelids.*

"From the contraction of scars of the upper eyelids and forehead, the upper lids are sometimes everted, and their tarsal border is bound firmly to the superciliary ridge.

"A plastic operation similar to that for the lower lids may be practised with advantage in this deformity. In the case of John Leach I operated on each of the upper lids, by making a transverse incision parallel to the tarsal border, at a distance of three lines above it. The substance of the eyelid was then dissected downwards, and freely loosened from the edge of the orbit. The upper eyelid being thus restored to its natural position, the vacuity was filled by a piece of skin transplanted from the temple. In both eyes the operation succeeded."

The cases are of great interest, but for these we must refer our readers to the pamphlet itself.

(B) CONCERNING THE CHEST, ABDOMEN, AND PELVIS.

ART. 97.—*On Excision of the Clavicle.* By MR. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Sept., 1857.)

CASE.—"Agnes W—, æt. 20, from Glasgow, was admitted into the hospital under my care on the 27th of February last, with the view of obtaining relief from a tumor on her left shoulder, firmly attached to the clavicle and acromion process of the scapula, but not interfering with the movements of the joint. It was about the size and form of a cocoa-nut divided longitudinally, and of a

reddish color, especially at the most prominent part, where a puncture had been made some time before. In addition to these unpromising characters, the consistence, which was soft throughout, and in some parts almost fluctuating, coupled with the fact that only five months had elapsed since the swelling commenced, led me, at first sight, to think very unfavorably of the case. Before deciding against interference, however, I considered it proper to make a more careful examination, which induced me to entertain some hope of being able to save the patient, who had no other complaint, and seemed to be in good general health.

"On tracing the clavicle from its sternal extremity towards the tumor, I felt that it was distinctly expanded at the base of the morbid growth, which I therefore concluded had originated from the bone, and not simply adhered to it. But having long taught and practised upon the principle that osteo-sarcomatous tumors never extend their roots beyond an articulation, and as the clavicle is separated from the acromion process by a perfect joint, I felt quite sure that if the disease had commenced in the former, it would not implicate the latter bone. Then, as the shoulder-joint moved with undiminished freedom, I felt sure that the tumor could not have acquired any intimate connection with the capsular ligament, from which, indeed, it would be separated by the bursa that lies under the deltoid muscle; so that there seemed to be no insuperable obstacle in the way of removal, while the patient's healthy aspect afforded encouragement to hope that the disease might not prove to be of such a malignant disposition as its appearance threatened. Being confirmed in these views by further observation and reflection, I proceeded to perform the operation on the 18th of March.

"An elliptical incision was made from the middle of the circle backwards over the most prominent part of the tumor, so as to include within its curves the portion of integument that would have proved redundant if allowed to remain. I then reflected the flaps, and exposed the clavicle at a little distance beyond the expanded part, where I divided it by cutting-pliers. A hook being next inserted into the extremity of the bone, and consigned to an assistant, with instructions to hold it steadily upwards, I carefully divided the connections of the tumor by dissecting upon the surface—not parallel with it—so as to complete the operation without inflicting any injury on the neighboring parts, more particularly the capsular ligament, which was, nevertheless, denuded over a large portion of its extent. The wound healed quickly under ordinary treatment, so as to be completely and soundly cicatrized on the 22d of April, when the patient was dismissed with less deformity and inconvenience than could be imagined by any one who has not seen how little disturbance results from removing the clavicle, even throughout its whole extent.

"The tumor was of a globular form, having completely expanded the clavicle to its extremity, without in the slightest degree affecting the acromion, and measured four and a half inches in one direction, by three and a half in the other."

The characters of the tumor were similar to those which are described by Mr. Paget as *cystic myeloid disease*.

ART. 98.—*A Case of Strangulated Hernia Obturatoria.* By Dr. LORINSER.

(*Wien Wochenschr.*, No. 3, 1857; and *Med. Chir.-Review*, July, 1857.)

As far as the author is aware, there is but one case on record (by Mr. Obré, in the "*Medico-Chirurgical Transactions*," vol. xxxiv.) in which this form of hernia has been recognized during life and relieved by operation; and even in that instance, the nature of the hernia was not suspected prior to the commencement of the operation. He now relates a case which occurred to himself, the nature of which was detected, and an operation performed with success.

On July 21st, 1856, a feeble, spare woman, æt. 65, while reaching a heavy object from on high, felt as if something burst in the groin. She was seized with pain in the abdomen and vomiting, and was brought to the hospital, and as there was no appearance of a hernia, she was at first supposed to be suffer-

ing from simple peritonitis. To the other symptoms were, however, added obstinate constipation, and after a while fecal vomiting. The author first saw her on August 1st—i. e. eleven days after the accident—when she exhibited general symptoms of the most unfavorable description. On examination, the inguinal and femoral canals were found quite free, but the triangular space formed by the adductor longus, Poupart's ligament, and the femoral vessels, was observed on the left side to be level with the surface, instead of depressed as on the right side. When the fingers were passed upwards towards the foramen ovale, a soft swelling, about the size of an egg, and sensible to pressure, was perceived behind the pectineus, stretching from the foramen ovale to the outer border of the adductor. It was placed posteriorly, and somewhat internally to the pectineus, and was yielding rather than tense, the color and temperature of the skin covering it being normal. Upon percussion the tumor imparted a deep, full, tympanitic tone. From the vagina, a somewhat tense, very sensitive tumor could be felt at the posterior edge of the foramen ovale. All movements of the thigh caused pain. The diagnosis was much facilitated by the spareness of the woman, and by the tympanitic tone elicited by percussion over the whole circumference of the tumor.

From the duration of the strangulation, and from the full, deep, tympanitic sound, it was concluded that the intestine had become perforated and gas effused into the sac. An operation was, however, resorted to, and the pectineus being brought into view, it was slit up, somewhat obliquely, upon a grooved director, as far as the border of the adductor. Immediately behind it was found cellular tissue filled with exudation, and then the discolored and softened sac. On opening this, a stinking fluid, partly watery, partly purulent, and containing particles of fecal matters, flowed out. The finger was now passed into a cavity which was bounded upwards by the obturator ligament, and in a cleft at the upper part of this ligament, and in part adhering to it, lay a relaxed and collapsed portion of intestine about the size of a walnut. Behind the intestine, at the lower angle of the cleft in the ligament, the pulsations of the obturator artery were supposed to be felt. On account of the great depth of the parts, no ocular examination of the intestine could be made. As the intestine was ruptured, and sufficient egress of the contents was secured, further division of the fibrous cleft was abstained from, in order not to endanger the separations of the recent adhesions, and consequent fecal effusion into the abdomen. The chief care was employed to secure a free discharge of the fecal matters, preventing them lodging in the surrounding cellular tissue. To this end the cavity of the sac was well syringed out, linen rags being then applied, and the whole covered with cold applications. A clyster of tepid water was ordered every two hours, and the diet was low.

As soon as a certain amount of fecal matters had been discharged through the wound, all symptoms of strangulation ceased. For the first few days, the discharges of fæces were pretty frequent, rendering the repeated cleansing out of the wound requisite. The clysters were soon employed but twice a day, a small quantity of fæces being discharged per anum. As these discharges continued, and contained matters of which the patient had partaken since the operation, there seemed every probability that only one side of the intestinal noose had been strangulated, the uninjured portion keeping up the communication between the upper and lower portions of the gut. The wound gradually cleansed and diminished in size, while the woman's strength and appetite increased until the end of August, when she became the subject of bronchitis. This delayed her progress, but by November the fecal fistula, which had long been inconsiderable, had quite closed, and she only remained longer in the hospital on account of the chest affection.

ART. 99.—*On Inflammation of the Prostate Gland.* By Dr. LEDWICH, Lecturer on Anatomy and Surgery at the Original School of Medicine, Dublin.

(*Dublin Quarterly Journal of Med. Science*, Aug., 1857.)

The symptoms attending subacute inflammation of the prostate are liable to some variety both as to number as well as intensity, being greatly influenced

by the period of the disease, the moral aspect of the patient, and the previous condition of the general health. There is a more frequent desire to pass water, sometimes continuing with great intensity for a few days, and then becoming mitigated without any apparent cause. The patient complains severely of an inability to retain his urine for any length of time; uneasiness in the perinæum, amounting to burning or scalding, with occasional sharp attacks of strangury, and a desire to go to stool, accompanied by great straining in passing the last drops of urine. The urine is usually acid, depositing crystals of uric acid and shreds of mucus; but it may be intensely alkaline, becoming rapidly ammoniacal, and throwing down mucus and the phosphates in quantity. There is likewise dyspepsia, with great nervous irritation, coughing, and straining at stool, or priapism, causing a discharge of mucus, perfectly clear and transparent, from the orifice of the urethra, which, being examined microscopically, yields the following composition: 1. Morphous crystals of uric acid, or ammoniaco-magnesian phosphates. 2. Mucus-corpuscles. 3. Blood-discs. 4. Epithelium. On introducing the finger into the rectum there is tenderness; and although a full-sized catheter (No. 10) will pass with facility through the urethra, it causes the patient the most intolerable agony, often lasting for hours after the operation. The penis is sometimes painful at the glans, and the organ is hard and shrunken, as if the crura participated in the general urethral irritation. In the morning the symptoms are almost absent, but increase gradually from midday, the patient being frequently roused from sleep by scalding pain in the urethra, and irritation of the rectum, which keeps up a continual desire to strain; or, again, there may be a discharge from the urethra simulating the escape of normal secretion, but which augments rather than diminishes the prevailing irritation. After some time the symptoms become aggravated, and the patient's health suffers in proportion. He is indolent, incapable of any active exertion, either mental or bodily; his appetite fails, memory lapses, the secretions become vitiated or checked; there is headache, pain in the back on the slightest exertion, and depression of spirits, more or less marked.

The patients most prone to this affection are those who lead a sedentary life, indulge in late rising and other forms of dissipation; who take but little exercise, and that, when taken, accomplished rather to induce fatigue than to create relaxation; and when once the disease is established, the constant lapse of the patient's mind towards its seat tends not only to perpetuate the malady, aggravating the prostatic symptoms, but also complicating it with others equally intractable as to their nature and treatment. As in all subacute diseases, one set of symptoms may predominate over others: thus, in one, the inability to retain the urine forms the principal source of complaint; in a second, the daily recurrence of perineal irritation; in a third, the urethral discharge; whilst in the most inveterate cases the mental influence creates a degree of depression more permanent than even the existence of a fatal disease. But fortunately this latter condition arises from the mistaken idea of the patient that he is the subject of a seminal affection about to eventuate in impotency; and to such an extent has this impression become rooted in the patient's mind, that it has at last induced mania, rendering a safe retreat essential, in order that moral as well as medical treatment might be put in force to remove the delusion and arrest its influence. To whatever cause the fact may be attributed, scrofulous patients, with fair skins and light complexions, of the nervous temperament, are most subject to this disease; and the author has met with it in two cases combined with chronic phthisis, which it much aggravated during its progress, and rendered intolerable towards the close of life.

An opportunity has occurred to the author, on two occasions, whereby he became acquainted with the pathology of this affection, and satisfied himself as to its true nature and locality. One case occurred at the age of 18, the second at 30; both were well-marked examples of the disease, and succumbed to phthisis, but this latter had no connection with the urethral affection. The prostatic-vesical plexus was full, and many of its branches varicose; the capsule of the prostate adhered intimately to its surface, and, on slicing the gland, it seemed soft, with large, open, venous branches on the section, from which

blood exuded, whilst the whole gland exhibited an augmented volume; the mucous membrane of its urethral aspect was *red, soft, thickened, and villous*, whilst the ducts could be distinguished with the unassisted eye; the *uvula* and *trigone vesicæ* were red and turbid, but the remainder of the bladder was healthy. He examined with some anxiety for the presence of tubercular deposit in the gland, but, although this morbid condition was often anticipated, no evidence of any such structural lesion could be detected. The seminal ducts did not present any alteration as to size, their excretory orifices being discovered with the greatest difficulty, the *vesiculæ seminales* being full and swollen, but without any other abnormal appearance; scrofulous tubercles existed in the epididymis, yet the testicles, although soft and small, were otherwise healthy.

From the foregoing details, it will be admitted that sufficient evidence appears to justify the assertion, that a subacute inflammation of the prostate gland really does exist, which, although without the active characters that mark the consecutive affection of gonorrhœa, is still sufficiently manifest to acquire a special pathological importance in urinary disease; nor can its obscurity as to its causation be received as any rational evidence of its innocuous tendency; for, on reflection, it becomes manifest that those diseases which generally elude immediate research are the most difficult to understand and obstinate to remove, and this difficulty is further enhanced in these special diseases by the similarity of the symptoms attending urinary affections, and the diversity of the pathological conditions of which those symptoms may be the visible manifestation. It is, therefore, rather by a system of negative reasoning, than by the presence of positive signs or special characters, that the basis of differential diagnosis of urinary affections must be founded, in order to represent any practical value in isolating disease, and determining its causes, nature, and treatment.

Dr. Ledwich then relates some cases, of which this is one:—

A gentleman, *æt.* 46, married, and subsequently contracted gonorrhœa, which yielded after some time to the usual treatment. He then, for two months, felt perfectly well, but gradually became affected with more frequent desire, stranguy, tenesmus, mucous discharge, and prostatic tenderness. The discharge is always tinged with blood, so as to discolor the clothes. It consists of mucus, epithelium, and blood-discs, the latter being numerous and granular. Ordered ten leeches to be applied to the perinæum, with gallic acid and extract of hyoscyamus internally. This treatment was not productive of any benefit. Anodyne enemata relieved the symptoms for a few days, but they again returned. After a long walk he had a strong desire to void urine, and he then observed that, by straining, only drops of blood were expelled. This continued during the night, and on the next day, when I saw him, he had lost about four ounces of blood. I recommended the recumbent posture, with small doses of gallic acid, sufficient to control but not wholly to arrest the bleeding. It progressed until the third day, when it gradually ceased, and with its cessation all the other symptoms of irritation permanently subsided, so that nature accomplished the salutary change that art was unable to achieve.

The author's conclusions are—

1. That a form of subacute inflammation of the prostate gland really does exist.
2. That it differs in its causes, progress, and termination, from any previously recognized disease of the gland.
3. That all circumstances tending to produce blood determination to the pelvic organs become exciting causes of the disease.
4. That it occurs at or about the age of puberty in the majority of cases.
5. That the scrofulous diathesis predisposes to its development.
6. That it is a progressive affection, but does not proceed to disorganization.
7. That it is frequently and ignorantly confounded with spermatorrhœa, they being sometimes, but rarely, associated as independent diseases.
8. That whilst caustic aggravates the disease, it yields to tonics, sedative injections, and counter-irritation.

ART. 100.—On the Concretions of the Prostate.—By Mr. HENRY THOMPSON,
Assistant-Surgeon to University College Hospital, &c.

(*Proceedings Royal Med. and Chir. Society*, vol. i. No. 3, 1857.)

This is a sequel to a paper on the "Anatomy and Pathology of the Adult Prostate" (v. "Abstract" XXV. p. 189), also presented to the Royal Medical and Chirurgical Society.

The existence of "concretions" of microscopic size, had been established in every one of the fifty specimens of the prostate exhibited. In many their size was that of a poppy-seed. They had been found also in the organ at 14 years of age. Their physical and chemical characters (the latter by rigid analysis) are given at considerable length. Their existence is concluded to be a necessary result of the performance of natural functions on the part of the prostate. After numerous observations it appeared that the formation of a concretion frequently originated in the aggregation of a yellowish matter often seen within the secreting nuclei lining the gland-ducts and pouches, often found free in yellowish granules, sometimes stuffing small ducts and follicles, and seen floating in the form of prostatic fluid as well as in the contents of the vesiculæ seminales. In the larger masses of this yellow matter, entirely occupying the interior of crypts or follicles, the small granules may be seen cohering, or as if fusing together, and presenting an appearance identical with that which is often seen existing in the centre of fully formed concretions. It was concluded that the coalescence of these yellow granules, or of the nuclei charged with them, their partial fusion into a mass more or less homogeneous, the stratification in part of this mass itself, or more probably the deposit upon its surface of fresh layers of fluid matter similar to that which originally constituted the interior, and finally, some addition of opaque earthy matter to it, either by infiltration or accretion (through irritation of the secreting membrane around, from the pressure of the newly formed body, as observed in numerous other instances referred to), were the steps by which the production of a "prostatic concretion" was very frequently accomplished, and its connection with "prostatic calculus" illustrated. The views of other observers were quoted and discussed at considerable length. Numerous drawings of these bodies in various stages of formation, as well as the original objects themselves under microscopes, illustrated the communication.

ART. 101.—Case of Bubo (?) within the Abdomen. By Mr. FURNEAUX JORDAN,
Demonstrator of Anatomy at Queen's College, Birmingham.

(*Edinburgh Medical Journal*, Sept., 1857.)

Inflammation and suppuration of an external iliac or a lumbar gland occurring during an attack of primary syphilis, does not appear to have been described by any author. The case, no doubt, is somewhat obscure; at the same time it is more easy to agree with Mr. Jordan, and refer it to the category of bubo (if the term of *βουβων*, the groin, may be used in this sense), than to simple peritonitis, pelvic cellulitis, or simple coincident abscess.

CASE.—"Benj. H.—, æt. 21, single, a nail-cutter, was admitted, September 9th, 1856, into the syphilitic wards of the Queen's Hospital, Birmingham, under the care of Mr. Knowles. On the 13th the following report was made: With the exception of an attack of gonorrhœa, twelve months ago, he has always had good health until he contracted his present attack of syphilis, from which he states he has suffered two months. He has had no medical advice previous to his admission into the hospital. Eleven days ago he first noticed pain at the lower part of the abdomen, which was combined with tenderness on pressure. At the same time he observed a slight swelling in the right groin, the disappearance of which, a few days subsequently, was followed by increased pain and tenderness, occasional sickness, and general prostration. Rigors have been frequent and severe. From the commencement of the abdominal symptoms he had diarrhœa, which ceased abruptly after a duration of ten days. The vomiting, which before had been occasional, twenty-four hours ago became

incessant. Has had no sleep for several nights. At present he lies upon his back with his thighs drawn up. The abdomen is distended, tense, and exceedingly painful and tender on pressure. There is unusual fullness of the superficial veins of the right inguinal region. The skin generally is sallow, the cheeks flushed, and the features contracted. Three chancres are visible on the preputial lining near the frenum, all apparently undergoing the healing process. There is extreme prostration, and articulation is difficult. There is no pain in the head, and the special senses are unimpaired. The pulse is 115, hard, contracted, and incompressible. The heart sounds are normal. The cardiac impulse, however, is greatly augmented. The pulmonary phenomena are unimpaired. The tongue is covered with a thick black crust. The skin is hot and dry. Urine natural.

"To make a daily report of the case would be a diurnal history of increased prostration to its *finale*—death. The vomiting was most intense, and for two days before death assumed a stercoraceous character. Dr. Heslop was asked by the surgeon to see the case, and all remedial means were adopted. The vomiting was distinctly relieved, on several occasions, by a simple means, which it is worth while to notice here, as Dr. Heslop, to whom it was communicated by a practitioner in the neighborhood, has found it to succeed in allaying urgent vomiting when all other means have failed. A dozen drops of chloroform were given in a table-spoonful of milk every second hour when the vomiting was unusually severe. Death occurred on the 30th of the same month.

"*Thirty hours after death.*—Body much emaciated. Rigor mortis present. A few ecchymosed leech-bites are visible at the front and upper part of the right thigh, immediately beneath Poupart's ligament. The cranial and thoracic viscera presented no appearances inconsistent with health. On turning aside the parietes of the abdomen, the viscera in the lower half of that cavity were found to be covered with layers of lymph. This condition was more especially pronounced in the right iliac fossa and in the hypogastric region, so that in these sites knuckles of intestine were bound together in almost solid bundles, by bands and patches of lymph. In the cavity of the true pelvis, this condition afforded resistance, as of a tumor, to the injection-tube or finger introduced into the rectum. In the right iliac fossa, the intestinal folds were not only glued together, but were glued also to the anterior wall of an abscess, which, on being turned aside, was discovered in the region in question. The abscess just referred to had a thin, gray, imperfect cyst wall. It extended over the greater portion of the iliac fossa. Its lower limit was three-quarters of an inch from Poupart's ligament; internally it was bounded in its lower half by the external iliac artery, being two or three lines distant from that vessel, the inner margin above was about a similar distance from the tips of the transverse process of the lumbar vertebræ. It was carefully ascertained that every portion of the osseous vertebral column was intact. Externally the abscess reached to within two inches of the crest of the ilium, and upwards two inches and a half above the iliac crest, at which part its lateral extent corresponds to the breadth of the quadratus lumborum muscle, with the fibres of which it was in contact. Anteriorly, the outer wall of the abscess was formed of a greatly thickened peritoneum; posteriorly the feebly organized cyst wall might be scraped easily from the muscular fibre of the iliacus below and the quadratus lumborum above. Running obliquely across the cavity, and altogether isolated in the purulent fluid, was the external cutaneous nerve in its progress from the lumbar plexus to the anterior superior spinous process. In the upper part of the anterior wall, though not isolated, was the ilio-inguinal nerve, passing more directly outwards from its lumbar origin. At the inner margin of the abscess, one inch and a half behind Poupart's ligament, one large lymphatic gland formed part of the wall of the cyst, the centre of the gland being entirely destroyed, with a considerable portion of the general structure, so that a hollow hemisphere only was left with ragged edges looking towards the abscess already described. Those portions of the small intestine which lay in the right iliac fossa were highly congested at their interior; and although the bundle was so glued together that the transmission of any contained matter was next to im-

possible, yet no portion of the canal was completely impervious. The coats of the rectum were greatly thickened. Inspection of the penis showed cicatrices of the chancres above described. There was no enlargement of any gland in the groin."

ART. 102.—*On the relief of Paraphymosis.* By the late Mr. ABRAHAM COLLES, Professor of Surgery in the Royal College of Surgeons of Ireland.

(*Dublin Quarterly Journal of Medical Science*, May, 1857.)

The two following cases are selected, among many others, from the unpublished writings of the late Professor Colles, by his son, Mr. Wm. Colles.

CASE 1.—January 24th, 1814.—A young lad, æt. 15, had drawn back the prepuce on Thursday, and it remained so till Monday evening. I made two or three ineffectual attempts at reduction by force; then tried by reducing the base of the glans to reduce its size; but I here also failed. I now thought I should have to divide it, and proceeded to the operation. On passing the director under the stricture, it struck me I might raise the skin, and depress the base of the glans. Passing the point of the instrument under the prepuce, at the right side, I raised it up, so as to be able to catch the skin between the finger and thumb; then, passing the director to the left side, I found that in its progress it raised up the skin, and brought it forward over the glans, and the reduction was effected without force.

CASE 2.—January 10th, 1815.—A man with paraphymosis applied; it had occurred three or four days ago, and prevented his having any sleep for the last three nights. Immediately after connection he endeavored to draw forward the prepuce, but could not succeed. The stricture is at some distance behind the corona glandis, and is very tight; the line of stricture is ulcerated, and of a blackish color; the skin, both before and behind the stricture, is much swollen. This appeared a very bad case, but was reduced with great facility.

I made the patient lie on the floor, on his back, and, kneeling at his right side, I passed the silver director under the stricture towards the right side, and, while the point lay under the stricture, I pressed down the swollen part of the prepuce and corona glandis with the stalk of the instrument; then, pressing this portion backward, I found it was easily pushed back beyond the stricture. In this manner, passing the director from the right to the left side, I quickly succeeded in removing the paraphymosis.

I think an instrument might with advantage be employed in such cases, somewhat of the shape of a shoehorn, only not much hollowed on the surface which is to be applied to the glans penis.

ART. 103.—*The probe-pointed Catheter for extremely narrow Strictures.* By Mr. HENRY THOMPSON, Assistant-Surgeon to University College Hospital, &c.

(*Lancet*, June 20, 1857.)

"There is," says the author, "no axiom more true or more important in relation to the employment of sounds and catheters in the urethra than this, viz: that danger increases in an inverse ratio to the magnitude of the instrument. In other words, the smaller the catheter, the greater the probability of injuring the canal. It is impossible to lay too much stress on this fact, or to impress too strongly its importance upon the student before he commences his practical acquaintance with catheterism on the living.

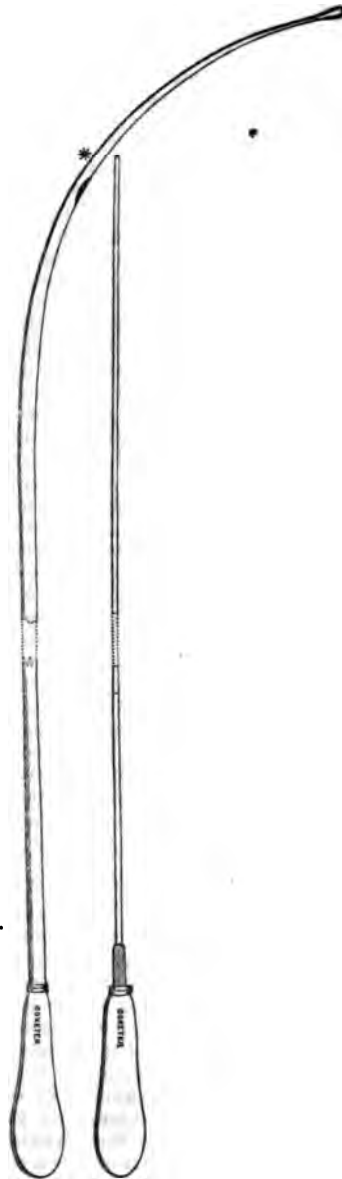
"But, on the other hand, it is not to be denied that there are some few cases of stricture in which the contracted part has become so narrow that no ordinary catheter will pass through it. I have verified this fact on the dead subject, where, neither inflammation nor spasm existing, the organic obstruction remains simple and uncomplicated; and, in common with others, I have occasionally found a stricture in such circumstances so narrow that the finest probe only could be insinuated through it.

"Such cases as these long resist the most patiently and carefully made efforts during life, and, despite of all the adjuncts which medicine, regimen,

and diet afford, valuable as they are in all cases of difficulty, do occasionally long hold out against the surgeon.

"These instances are very rare. But I am inclined to believe that the secret of success *for them*, all other means failing, is to use a sufficiently small instrument. It is unquestioned that there are some strictures so narrow that a catheter of the smallest size, slender as it is, will not pass them, nor indeed any instrument which is not some degree smaller. Hence the employment of catgut and elastic bougies of extreme tenuity. Such are necessarily, however, very unreliable instruments, from the impossibility of commanding them in their progress along the urethra, or of even knowing where they go. At all events, that most satisfactory test of success, which should never be dispensed with when it can be employed, viz: the outflow of urine through them, is with such instruments impossible. Hence it is, then, when requiring the smallest size of Syme's staff, I have found the advantage of employing one with a bore throughout. The appearance of the urine at its handle is the best and safest guarantee of the position of a small instrument; and *the smaller the instrument, the more necessary is the guarantee.*

"In the autumn of 1855 I had a case which foiled several carefully made attempts, aided by the means which medicine suggests in such circumstances, and which need not here be detailed. The catheters which I had long used for such cases, viz: two sizes less than No. 1, were obviously too large. The patient passed his urine only in small drops, and was wholly incapacitated by his complaint from business of any kind. I then devised an instrument, which, while it was as small, if not smaller, than any catgut bougie, was also capable of permitting the urine to flow through it. It was at the same time as strong, as firm, and as solid in the hand as any catheter of the size of No. 2 at least. In that case it was perfectly successful. I drew off the patient's urine with it, tied it in his bladder, replaced it by larger instruments, and finally cured him by dilatation. I have employed it in three similar cases since, in which I could not succeed in introducing small catheters, and in all it led the way to a cure by dilatation; that is to say, to a condition in which the patient continues free from every symptom of complaint or annoyance by occasionally passing for himself an instrument varying in size from No. 8 to No. 10.



The left of the two figures is the "probe-pointed catheter." The eye is seen below the asterisk, which marks the point at which the channel ceases. From the asterisk to its termination the instrument is solid.

The right-hand figure represents the steel stilet which screws into the catheter, and fills its interior.

"One of these patients, to whose stricture this instrument was the key, had, after repeated failures in London, tried the resources of Paris, without success, no one having before succeeded in introducing an instrument into the bladder. That gentleman now enjoys, after twenty years of suffering, excellent health, passing for himself at present a No. 9 catheter once a week.

"The instrument, which is made of silver, will be seen, by reference to the subjoined engraving, to have nearly the form of a catheter. Its last two inches, however, are made perfectly solid. This extremity can therefore be made of any size or form desired, these not being limited by the necessity for a channel inside. However small it may be necessary to use an instrument in any given case, so small can this probe-pointed extremity be constructed. At about two inches and a half from the end the channel begins, and the small eye is placed, the instrument increasing in size first to that of a No. 1, and then to nearly that of No. 2, which is continued throughout the entire shaft. Finally, the whole is strengthened by a small steel rod or stilet, which accurately fills the interior, and to which the handle is attached. The small eye cannot, therefore, be blocked up with mucus or other matters. Moreover, this rod screws in, and gives to the instrument the most perfect solidity. Having succeeded in passing the stricture, it is carefully insinuated a little further, when, on unscrewing the handle, the urine will issue from the external orifice, by drops only, it is true, on account of the smallness of the internal orifice, but in a manner which in time relieves the patient, while it assures the operator of his complete success. It may be called "the probe-pointed catheter." It is needless to add, that the utmost care and lightness of hand are absolutely necessary in the management of so small an instrument; and any deviation from such practice is extremely hazardous. Certainly its use cannot be recommended to beginners, or to those who are not well accustomed to the use of instruments, in the urethra.

"I may add, that the handle *being removed with the stilet*, it is easy to screw in its place a small steel rod, and slide over it a fine gum-elastic tube, made of silk, into the bladder, if desired, after the solid instrument has been retained a few hours, thus insuring the absence of difficulty in reaching the bladder a second time, a method of proceeding which Mr. Wakley has done much to introduce into practice. In many hands, such a plan would be the safest and most desirable. Further, the small instrument should not be retained longer than is necessary to facilitate the introduction of the second. This plan being employed for the first step, if preferred, the remaining treatment may be conducted in any manner which the circumstances of the case appear to indicate."

ART. 104.—*The treatment of Hydrocele by Substitution.* By Dr. BURGRAAVE.
(*Journ. de Méd. de Bordeaux*, Sept. 1857; and *Dublin Med. Press*, Oct. 21, 1857.)

The author has brought before the Society of Medicine of Ghent a new mode of treating hydrocele, which he terms *by substitution*, and which consists in substituting a hydrocele by diffusion for the hydrocele by effusion. He has already tried this method a dozen times with success.

It consists in making in the tumor a certain number of punctures with an acupuncture needle; a serous thrombus is immediately formed, and at the end of half an hour all the serum has been transformed to the areolar tissue of the dartos, where it is quickly absorbed. The absorption is promoted by means of iodine, either by rubbing in the ointment, or by painting with a watery solution of iodine and iodide of potassium.

The author believes that a radical cure is thus obtained, because the patients operated on have not returned after more than two months. At all events, the operation is harmless, and may be repeated if required.

What justifies us in allowing the possibility of radical cure by this method is, that to obtain such a cure, it is not necessary, as was long believed to be the case, to produce plastic inflammation and adhesion of the laminae of the tunica vaginalis.

(C.) CONCERNING THE UPPER EXTREMITY.

ART. 105.—*On the treatment of Wounds of the Palmar Arch by forced flexion of the Arm.* By Mr. J. GILES.

(*Proceedings of the Royal Med. and Chir. Society*, vol. i. No. 3, 1857.)

Wounds of the palmar arches have the reputation of being among the most troublesome of injuries involving hemorrhage with which the surgeon has to deal. The application of pressure to the palm of the hand generally causes considerable infiltration, swelling, and tenderness; and is also frequently unsuccessful, hemorrhage being apt to recur after a few days under more disadvantageous circumstances than at first. The usual plan of applying the ligature at the seat of injury is frequently difficult or impossible in a part where the vessels lie so deep among aponeurotic, tendinous, and nervous structures, as in the palm of the hand. The application of the ligature in the forearm is attended with the disadvantage that the obliteration of one artery is often not sufficient, and, even when both the radial and ulnar have been tied, the hemorrhage is still frequently kept up by means of the interosseous artery. Ligature of the brachial artery is therefore sometimes had recourse to; and even this apparently extreme measure is not always successful, as is illustrated by a case recorded by Mr. Skey ("Lancet," June 2d, 1855), in which the radial, ulnar, brachial, and axillary arteries were successively tied. Upon the removal of the last ligature, hemorrhage again recurred, and was only ultimately arrested by very firm bandaging of the whole of the limb, at the risk of inducing gangrene.

Though all cases are not of this formidable character, still a method of treatment which should have the advantage of checking the hemorrhage without either severe local pressure or ligature of vessels is a desideratum in the management of these cases. This advantage seems to be possessed by the plan of flexing the forearm upon the arm with sufficient force to arrest the bleeding, and maintaining it in that position so long as may be necessary.

This plan was proposed by M. Durrwell ("L'Union Médicale," tome iii. No. 86, p. 341), who adopted this method of treatment in the case of a woman who fell from a ladder and cut her hand with a broken bottle. The arm was flexed forcibly, but not sufficiently to cause pain. A pad was placed upon each of the two arteries of the forearm. On the third day, the arm being released from its position, bleeding returned. The position was renewed, with the effect of entirely controlling the bleeding, and maintained until cicatrization had occurred. Simple dressing was applied to the wound throughout. M. Durrwell lays down the principle that "in the greater number of arterial lesions of the forearm and of the leg, forced flexion, continuously used, will supersede the ligature."

Dr. Toogood, in his "Reminiscences of a Medical Life," states that he has "seen this practice successful in a wound of the forearm, accompanied with profuse hemorrhage, the source of which was rendered uncertain from the swollen and altered state of the limb; and the same practice may probably be adopted in some wounds of the lower extremities." In another part of the same work, however, Dr. Toogood relates a case in which this plan seems to have failed. The case, which occurred under the care of Mr. Alford, surgeon to the Taunton Hospital, was that of a man who wounded the palm of the right hand, rather to the carpal side of the middle, with some glass, on July 6th, 1853. The bleeding was restrained by compresses over the wound and over the radial and ulnar arteries. Bleeding continued to recur at intervals, and to be checked by the same means, until August 4th, when it returned very freely. Forced flexion was now had recourse to, which succeeded for a time, but any movement of the fingers caused a return of the bleeding. On August 6th, an incision was made in the palm, and three ligatures applied, which measure proved successful. In this case the forced flexion was not applied till nearly a month after the injury. The following case occurred at the London Hospital, under the care of Mr. Luke:—

CASE 1.—A girl, æt. 14, on July 13th, 1855, received a wound a little to the radial side of the left palm, from the fragment of a broken vessel. The bleeding, which had been considerable, had ceased at the time of her admission, and compresses were applied. At the end of three days the pressure caused so much pain that the dressing was changed. This was followed by hemorrhage, which was checked by pressure and cold water. In two days active bleeding again came on. Forcible flexion was now had recourse to, at my suggestion. This completely checked the bleeding. In two days the bandages were a little relaxed, but, as bleeding freely recurred, they were again tightened. The flexion was discontinued five days after its first application. The wound was now suppurating healthily. A slight compress of lint, with water dressing, had been kept on the wound during the treatment. Unfortunately, some irritation had been produced in the fold of the elbow, causing a slough. This was followed by contraction of the arm which was met by gradual extension on a splint. In this case the flexion was not had recourse to until five days after the injury, when the arm had become swollen and irritable. This, together with the circumstance of the flexion having been relaxed somewhat too soon, thereby necessitating a longer continuance of it, may account in some measure for the sloughing.

I am indebted to Mr. Robert Debenham, late house-surgeon to the London Hospital, for the particulars of the following case:—

CASE 2.—A man, æt. 24, was admitted, December 27th, 1856, under Mr. Curling. Besides a stab in the side, there was a punctured wound, three-fourths of an inch in length, on the anterior surface of the left wrist, and extending into the palm. There was active arterial hemorrhage. A compress was placed on the wound, and one on each side of the arteries at the wrist, and the whole limb was firmly bandaged from the tips of the fingers to the elbow.

28th.—Bleeding came on very suddenly and freely. The arm was forcibly flexed, without altering the bandages. This quite controlled the bleeding. The position of the arm, however, caused considerable uneasiness. The forced flexion was discontinued December 31st. The wound healed in the course of a few days.

CASE 3.—A boy was admitted into the London Hospital in February, 1857, with a wound of the superficial palmar arch, under the care of Mr. Luke. In this case Mr. Jenkins, the house-surgeon, with the view of trying the efficacy of forcible flexion, quite unassisted by any other means, used no pressure whatever upon the palm. The bleeding was completely controlled, but, upon releasing the arm from its position, a pulsating tumor was found in the palm. This was treated by pressure, but in two or three days hemorrhage recurred. Forcible flexion was again used, accompanied by pressure at the palm. This was found to control the pulsation in the tumor, and was continued until the integuments in the fold of the elbow began to show symptoms of irritation. The position was then relaxed, and for a day or two longer pressure was applied upon the palm and upon the arteries at the wrist. At the end of this time the pulsating tumor was quite abolished.

The cases above recorded seem to warrant the expectation that the plan of forcible flexion will be found to be generally applicable in cases of wounds of the palm, and also of wounds of the forearm in which, from any cause, the ligature cannot be applied at the seat of injury. Including the case recorded by M. Durrwell, and the two mentioned by Dr. Toogood, six cases have been above adduced in which this treatment was adopted. Of these six cases one only was unsuccessful, and in this case the plan was not adopted until nearly a month after the injury. Of the five successful cases we have two in which some ill consequence ensued after this mode of treatment. In one of these sloughing occurred in the fold of the elbow, in the other a spurious aneurism was produced in the palm. The former, of course, can alone be in any way attributable to the treatment by forced flexion, and this consequence might probably be readily avoided by applying the flexion at the outset, by avoiding a premature relaxation of the position, which involves the necessity of commencing over again, and by taking care that there is no fold of a bandage or other source of irritation in the fold of the elbow.

A moderate degree of pressure upon the palm would probably prevent the formation of a pulsating tumour.

While speaking of the manner in which the forcible flexion should be used, I may mention that several people, whose arms I have placed in this position for purposes of experiment, agree in stating that the flexion can be more easily borne when the forearm is in a condition of semi-pronation, *i. e.*, with the palm looking towards the opposite side. Others find little difference in this respect. This method of placing the arm has the advantage of allowing the palm to be dressed without altering the position. Out of the above six cases there is only one in which the forcible flexion is stated to have caused much uneasiness.

Mr. Giles thinks that this mode of treatment may arrest the bleeding, partly by the pressure of the muscles of the arm upon the arteries proceeding to the hand, and partly to the arteries being bent upon themselves at an acute angle, and in that manner rendered impervious.

ART. 106.—*On the treatment of some Injuries to the Hands.*
By MR. BIRKETT, Surgeon to Guy's Hospital.

(*Lancet*, Oct. 31, 1857.)

The main object of this paper (which was read before the Medical Society of London, October 24th, 1857), was to illustrate the bad effects of applying adhesive plaster to wounds and injuries of the hands, and to recommend the treatment of these cases by the use of slips of lint, kept constantly wet by means of an instrument called an "irrigator," placed at the head of the patient's bed. Several practical illustrations of this mode of treatment were given, it being especially advocated in every kind of injury of the hand or fingers, except the purely incised wound inflicted with a sharp cutting instrument. In such, the careful adjustment of the lips of the wound with adhesive plaster may be admissible. In other injuries complicated with wounds, the author's experience induced him to recommend the thorough cleansing of the hand by soaking in lukewarm water, and narrow strips of linen or lint wetted in tepid water to be lightly applied around the injured fingers, commencing from their ungual phalanges. When severe lacerations of the hand or palm are present, they are to be treated by pieces of lint with a slit in them, the arm to be supported and raised upon a pillow, and irrigation used. A drawing of the irrigator employed in Guy's Hospital was exhibited, and its advantages pointed out. The following is a classification of the injuries to which the treatment described is especially adapted:—

1. All incised and lacerated wounds of the integuments.
2. The same wounds complicated with similar injuries of the muscles or tendons.
3. Incised and lacerated wounds by which the joints are cut open.
4. Compound fractures of the bones of the metacarpus and phalanges with severe contusion, and those accidents by which one or more of the fingers are torn off by machinery, leaving—as in the case of the thumb for example—more or less of the bone of that important organ exposed without any covering of soft parts.
5. Injuries produced by the explosion of gunpowder from firearms, with or without shot, by the force of which the soft parts are more or less lacerated, contused, and destroyed, and the bones fractured.

(D) CONCERNING THE INFERIOR EXTREMITY.

ART. 107.—*A new mode of employing Counter-Extension in Fractures of the Thigh.* By Dr. HENRY HARTSHORNE.

(*Transactions of the College of Physicians of Philadelphia*, vol. ii., No. 9, 1855.)

The essential idea of this apparatus appears to have originated with Dr. Joseph Hartshorne. The object is to save the perinæum, and this would

seem to be gained very effectually,—the difference between this apparatus and that in general use, being, to use the words of the author, “exactly that which exists between riding upon a *saddle* and upon a *rope*.”

“It is true,” says Dr. Hartshorne, “that the *chief* difficulty, with regard to excoriation, has been at the ankle; and that this has been removed by the use of adhesive plaster for the extension, in the manner employed by Dr. Ellerslie Wallace, of this city, and by Dr. Gross, and now adopted in the Pennsylvania Hospital. But, in many cases, there is also much trouble with the perinæum; and no method has yet been devised, by which the adhesive plaster alone may be used for counter-extension. In all the forms of apparatus in use, there is a constant compromise between the effort to *extend the limb*, and the endeavor to *preserve the skin*. One of these ends is incessantly sacrificed more or less to the other. In Desault’s splints, this is evidently so to such an extent that, if daily removal of the dressings and friction of the parts be not practised, excoriation may very probably occur, and defeat the extension. This *frequent disturbance* of a fractured limb must, of course, be objectionable in every way.

“In the employment of the modification of Boyer’s splints, which has the name of Hartshorne’s apparatus, in which a pad or crutch is substituted for the perineal band, the same difficulty occurs, although to a less extent.

“Jarvis’s adjuster, when applied to a fracture of the thigh, will, as was fully shown in the case of the lady above alluded to, produce excoriation, both in the perinæum and above the knee, as soon as any other; while the greater power under our control renders the liability to this accident still greater.

“It will be hardly too much to say, as to Hagedorn’s apparatus, that without the elongation of the splints to the axillæ, as modified by Professor Gibson, the counter-extension is not at all reliable, on account of the movement of the pelvis toward the injured side; while, if we use the elongated splints, the confinement of the position, with both limbs and the trunk under restraint, must be unbearably irksome.

“What is yet needed, then? Evidently, to have the counter-extension applied to a part which is adapted and accustomed to pressure.

“No part of the body is so particularly adapted to pressure as the region of the *tuberosity of the ischium*. With regard to firmness of pressure upon this part, an illustration may be drawn from the stop or wedge used upon railroad inclined planes, to arrest the descent of cars from accident, consisting of a short inclined plane.

“For perfect security, in this case, it may be perceived that the short inclined plane should have an inclination perpendicular to the line of impulsion of the body to be arrested. This line is a diagonal between two forces; the force of gravitation, perpendicular to the earth, and the force of impetus in descent of the car, or of extension in the limb. This force of extension, in the case of a fractured thigh under treatment, acting in the line of the limb, that is, horizontally, and the force of gravity being exerted in a perpendicular direction, a diagonal between these will be at an angle of 45° with the bed. A plane to which this diagonal is perpendicular, that is, one whose angles with the bed are 135° and 45° , will afford the requisite firmness for resistance in the counter-extension of the thigh. It will be impossible for the pelvis to slide over it, so long as no force is used except that of gravity and that of the extension in the axis of the limb.

“Having constructed a block, then, upon this idea, a *lateral* concavity may be made in it without altering the direction of its pressure, to adapt it to the form of the seat. It thus resembles a portion of a saddle, or a privy-seat. Its height may be two and a half or three inches; its width, seven or eight. A *socket* may also be scooped out for the reception of the tuber ischii, although the necessity of this is questionable. In a trial upon his own person, in which a force of 200 pounds pressure was exerted upon the block by a muscular man, Dr. Hartshorne has convinced himself that a very much greater amount of pressure can be sustained in this way, than could possibly be endured upon the perinæum. The difference is exactly that which exists between riding upon a *saddle* and upon a *rope*.

“It is necessary, then, only to cut away that portion of the block which

might incommode the patient in defecation, and to fix it firmly between two splints, resembling those of Desault. At the lower end of these may be placed a foot-board, connecting the splints, for the purposes of extension. It is well to add, also, what is believed to be the best method of commanding extension: by fastening the ends of the adhesive strips, or tapes, to a *cylindrical roller*, hung between the splints.

"This may then be controlled by a handle, in the manner of a windlass, being prevented from returning by the insertion of a pin or catch, through any one of a series of holes in the outer splint.

"The only *a priori* objection which has been suggested to the above mode of counter-extension is, the supposed possibility of the patient lifting himself, so that the pelvis will ride over the block. This is evidently impossible without a strong voluntary effort, or one made during sleep or in delirium. The socket for the tuber ischii would act as a lock or latch, much increasing the security against such an escape. But a further protection may be readily obtained, in two ways:—

"First, let a horizontal slit be made near the upper end and edge of the inner, and the opposite portion of the outer splint, of about six inches in length; through these slits and over the thigh, as well as around under the splints and limb, let there be passed a broad bandage, or splint-cloth, with its ends torn into four or five tails, of several inches in length, so as to tie in as many knots. This will effectually secure the thigh from rising so as to remove or lessen the counter-extension.

"Secondly, we may also use *adhesive plaster* to aid in this security, by fastening a wide piece of it underneath the block, and bringing it up over its concave surface; the warmth of the body will cause it to adhere, and make it altogether impossible for the pelvis to rise without carrying the block with it.

"By adding a wide junk-bag filled with bran, to lie under the whole length of the limb below the block, and two smaller ones, like those used with Desault's splints, to lie upon the sides—we have the apparatus complete.

"The mode of fastening the upper ends of the splints to the sides of the block, may be much a matter of choice. It is unnecessary to occupy time or space with a description of the simple arrangement used in the model exhibited. It is well, however, to have the outer splint removable.

"In compound fractures, of course, it will be better to have a complete box made, by affixing a bottom between the two splints through their whole length.

"The same means of counter-extension precisely, may, of course, be equally well adapted to the treatment of fractures of the *leg* requiring extension. It is not impossible, even, that, with some modification, the counter-extending block, or pelvic crutch, may be used instead of the perineal band in treatment of *luxations* of the femur. A glance at the skeleton, or an exploration of the ischio-gluteal region of the body in the recumbent posture, will show to any one the amount of *purchase* there at our command.

"With regard to the novelty of the above method of counter-extension, Dr. Hartshorne has found nothing bearing any resemblance to it, unless it be a contrivance of M. Bonnet, of the 'Ecole de Médecine at Lyons.*' This consists of a *wire-work* shaped to fit the limb, which rests upon it. But it does not appear, either from the text or the plates of M. Bonnet's work, that any considerable force of counter-extension could be applied by its means; it being used chiefly for fractures of the *neck* of the femur, and for sub-luxation in coxalgia. The difficulty of its construction, also, is in the way of the use of such an apparatus.

"*Metallic 'gouttières'* or troughs, were used by A. Paré in treatment of fractures of the leg: afterward by Ravaton, and particularly by M. Mayor, of Lausanne. But in none of them does there appear to be an arrangement of a sort adapted to fractures with decided shortening of the limb."

* "Maladies des Articulations."

ART. 108.—*On the treatment of Hydrarthrosis of the Knee-joint by Iodine Injections.* By Dr. ROBERT MACDONNELL, Surgeon to St. Patrick's Hospital, Montreal.

(*Montreal Monthly Journal*, June, 1857.)

This practice, though strongly recommended by Bonnet, of Lyons (who introduced it), Velpeau, Jobert, and other French surgeons, has met with no advocates among British surgeons. Indeed, it has been strongly objected to. There is no doubt, however, as to the benefit resulting from this practice in certain cases, and we are glad, therefore, to have additional evidence on the subject. Dr. Macdonnell, it appears, has treated successfully five cases of hydrarthrosis of the knee-joint by this method, and of these he now gives three, which occurred in his public hospital practice.

CASE 1.—A. P—, a cooper by trade, æt. 26, consulted me, April 11th, 1853, on account of an affection of the right knee-joint of four years' duration. He was a thin, middle-sized man, without any marks of scrofula about him, of dark complexion, and bilious temperament. He stated that the present disease began four years before, with pain in the right knee, which gradually increased, and was soon followed by perceptible swelling of the joint, and these symptoms becoming daily more distressing, he consulted several surgeons of this city, and adopted various remedies recommended by his friends, without benefit. For a year before I saw him, he was unable to work at his trade and could not walk, except with the aid of a crutch and cane. It is unnecessary to detail the various plans of treatment that had been pursued; suffice it to say, that the joint bore evidence of all the usual remedies for chronic synovitis having been employed. On examination, I found the joint much enlarged, being four inches greater in circumference than the opposite one; but this enlargement was not so perceptible in the joint itself as in the circumference of the thigh immediately above the patella, where there was a large oval-shaped swelling extending along the outer side of the tendon of the rectus femoris, to a distance of nearly five inches, and communicating under that tendon, with another swelling, of a similar shape, but much smaller, on the inner side of the thigh. At each side of the ligamentum patellæ there were small tumors which fluctuated and communicated with those above, giving to the joint the *bosselé* appearance so well described by Bonnet. The integument was not discolored except from the effects of previous treatment; there were no enlarged or tortuous veins on the surface of the tumors; pain at the lower edge of the patella and inner side of the knee increasing at night, or after attempts at walking, was complained of. When at rest, the leg was usually flexed, and then the joint presented a more globular form than when the leg was fully extended, the patella appeared on the summit of the swelling, but when extension was made, the tendon of the rectus, the patella and ligamentum patellæ appeared depressed, and the tumors already described became better developed. There was no emaciation of the leg or thigh.

Being satisfied that the ordinary plan of treatment would not succeed, I determined to puncture the joint and let out its contents, as from the great size of the swelling, I was anxious to reserve the injection of the sac until it had become somewhat diminished, in the event of its filling again after puncture. Assisted by Dr. Jones, Surgeon to the Montreal General Hospital, I tapped the outer and larger tumor with a small hydrocele trocar, taking care to make the puncture at the part most remote from the joint, and drew off a large bowlful of fluid, of a straw color, and closely resembling the contents of a hydrocele. The reader may conceive the quantity of fluid contained in the sac, when he is informed that I brought away, for chemical and microscopic examination, the full of a Florence oil-flask, besides what was spilt and left at the patient's residence. The operation produced no inconvenience, adhesive plaster was put over the aperture, and the joint bound up in a wet bandage, another wet bandage was carried from the ankle to a distance above the knee, a padded splint was placed under the knee, and so fixed above and below, as to prevent the least motion in the joint. Small doses of tartar emetic were administered, low diet

prescribed, and directions given that the bandages should be kept moist with luke-warm water.

It is unnecessary to detail the daily symptoms. For the first twenty-four hours there was no pain complained of, and the patient appeared very comfortable, but on the second day, the joint began to swell, and I was obliged to loosen the bandage slightly. The swelling increased gradually, but without any increase of suffering, for the next ten days. I now determined to avail myself of the reduced size of the hydrops, to puncture it again, and inject the sac with iodine, which I did on the twelfth day from the first operation. This was done in the following manner. The leg being extended, a wet bandage was placed round the lower part of the knee joint, and carried up to a level with the upper edge of the patella. It was given in charge to an assistant with directions to draw tightly upon it, whilst the fluid flowed through the canula. By this means the contents of the lower part of the synovial sac were pushed up into the pouch above the level of the articulation, making the upper tumor more full and tense, and serving to protect the articulating surfaces from the first effects of the injection. When the fluid was drawn off, about *two drachms of the strongest tincture of iodine with an equal quantity of luke-warm water* were injected through the canula, and allowed to remain; care being taken by changing the position of the joint, and manipulating the sac, that it should come in contact with the whole inner surface of the synovial membrane lying in front of the femur.

The wet bandage was now carried round the limb, to a distance of six inches above the patella, and moderate and equable pressure was thereby exercised upon the point. A long padded splint was applied, and perfect rest of the joint thus secured. The patient complained next day of severe pain, but not so great as to oblige me to remove the bandages. An opiate was given for the first three nights, and after that, the patient felt so well, that he left his bed on the fourth day, and I ceased to attend him at the end of three weeks. I have not seen him since, though I hear frequently of him. He soon returned to his trade, and has worked at it for the last four years without any return of the disease. For some time after the operation the affected limb remained weak, and yielded in walking, but his friends assure me he is now quite well, and walks without the least lameness. At his recommendation the patient whose case immediately follows, was sent to me by a Society that had supported him for the last two years.

CASE 2.—A. C., æt. 40, cooper, a dark complexioned man of slender make and unhealthy appearance, consulted me under the following circumstances. For the last *four* years he had suffered from an affection of the left knee joint, which had rendered him unable to earn his livelihood for two years past, since which period he has been supported by a charitable institution in this city. He states that he has been treated by *thirteen* medical men, and his knee joint bears marks of frequent cupping, moxas, issues, and pustulating liniments and ointments. He has been blistered several times, and has taken a great deal of medicine internally. The usual quack nostrums resorted to, by persons of his rank, when they have in vain sought relief from scientific surgery, have also been tried in succession, and so convinced was he that it was useless to attempt anything further, that he had abandoned all hope of recovery, when he heard of the patient whose case has been described. It is unnecessary to detail at great length the symptoms he complained of, but in a few particulars his case differed from the former one. *The leg and thigh were much emaciated*, the swelling was greatest on the *inner* side of knee joint and the corresponding side of the patella, and though the joint appeared much larger than the other, it was only two inches greater in circumference. The patella was pushed forward very much, and on examining the inner side of the joint, the crackling sensations spoken of by authors were easily detected. The leg was flexed, and extension caused pain. During the day he suffered less than at night. I advised him to enter St. Patrick's Hospital, where I operated on him on the 13th April, 1857, being assisted by my colleagues Drs. David and Howard.

The puncture and injection were performed precisely as in the former case, and the same precautions taken to have the joint firmly bandaged from below.

I need not fatigue the reader with the daily details of the case; for, truth to say, nothing worthy of note occurred. There was no swelling or pain in the joint, no fever, no uneasiness whatever; and though my directions were very explicit that he should not attempt to move the joint, yet I had great difficulty in persuading him to remain quiet in bed. The wet bandage was continued for ten days; then a dry one was kept applied for a few days; and finally, the knee joint was put up in a starched bandage, and gentle use of the limb permitted. From the beginning till the end of the treatment there was not a single symptom present to cause one moment's anxiety.

CASE 3.—This case, also witnessed by my colleagues, Drs. David and Howard, is still more encouraging; for, though the operation was performed under very unfavorable circumstances, yet the perfect success of the treatment must do much to remove the prejudice that exists against it.

A dark complexioned, middle-sized man, æt. 25, a carriage-maker, who had come from the United States to consult me, presented the following appearance: the right eye was prominent, owing to caries of the malar bone which had left a deep depression, corresponding to its orbital portion; the nose was depressed slightly in the centre, from the destruction of both lachrymal bones, with corresponding parts of the nasal and superior maxillary bones. The surface of the body was marked with scars, the results of former ulcerations; and from the carious bones of the nose fetid discharge was taking place, and the two holes above the diseased lachrymal bones were filled up with pledgets of charpie; a most offensive fetor was exhaled from his nose and mouth. In addition to the above diseases, he presented a well-marked hydrarthrosis of the left knee, of *seven years' duration*, which had been so distressing for the last two years that he had been almost unable to put the foot to the ground. For the first year, he says, he was able to keep down the disease by rest, counter-irritation, and internal remedies. For the next three years, he was able to walk about with the aid of a staff, and to work at some parts of his trade which did not oblige him to stand. He also sought other employments requiring less use of the limb. For the last two years he has been under medical treatment in different hospitals in the United States; and though the disease of the facial bones is distressing, yet, as the affection of the knee prevents him earning a livelihood, he is more anxious about it than his other maladies.

The left knee was enlarged to the extent of two inches and a half, both below and above the patella, and the enlargement was more of an oval shape than globular, and was not greater on side of the rectus femoris than the other, but seemed to lie mostly under its tendon, pushing it forward and giving to the upper part of the swelling an abrupt commencement. When pressure was made upon one side of the rectus tendon, the fluid was pushed to the opposite side, making a prominent tumor. The fluid could be easily made to pass from one portion of the joint to the other. The integument appeared thicker and paler than in the two former cases, and was not so much discolored from local treatment. As the patient had himself witnessed the result of the treatment in the second case, he gladly consented to my proposal to adopt the same plan with him.

The puncture and injection were performed as already described, on April 28th, 1857. The quantity of fluid drawn off did not amount to more than six or seven ounces. It was clear and yellow, presenting the usual characters of the contents of these dropsies. The integument was not thinned so much as in the four other cases. No pain or swelling followed the operation, and notwithstanding his cachectic appearance and bad constitution, the progress toward cure was uninterrupted by the occurrence of a single bad symptom.

"Many of those," says Dr. Macdonnell, "who object to the above plan of treatment, do so under an erroneous idea of the nature of the disease for which it is recommended, and also of the results that are expected to be derived from it. Thus, we find some who have written and spoken against it, confounding simple chronic hydrarthrosis with white swelling (*tumeur blanche*), and objecting to the injection of a dropsical joint, because the treatment did *not succeed in a completely disorganized and suppurating articulation*. Now, *I would wish it to be distinctly understood, that it is to pure uncomplicated*

chronic hydrops of the knee-joint, that my suggestions as yet apply; for I have not employed the treatment in any other joint, and though I do not believe that injection of iodine would do any harm to a joint already destroyed by ulceration, yet I wish the point to be clearly understood, that it is not in such affections I recommend it. It has also been stated that serious consequences must necessarily follow the mere puncture of so large a joint, and *a fortiori* the injection of it with iodine, or any other irritating substance, must be extremely dangerous. I shall not here occupy my reader's time in proving the difference, as to consequences, between the puncture of a joint in its *physiological* condition, and a similar wound inflicted upon it in its *pathological* state. Until the surgeon shall have acquired clear and distinct ideas on this point of practice, he cannot understand the rationale of injections into joints, the seats of chronic synovial effusions; nor of incisions into large and small joints already in a state of suppuration, as recommended by Gay and others, and which (as regards the smaller joints) I have myself often performed.

"There is another objection urged against this practice, founded on the supposition that excessive inflammatory action must necessarily follow the injection, and that ankylosis or even the death of the patient might ensue. In this, as in other instances, one fact is worth a hundred theories. Puncture and injection have been performed not only without bad consequences, but with the greatest success; therefore, to discuss this point any further would be fruitless. But some of the opposition to the practice may be ascribed to the views of Bonnet himself, and to his method of operating. He injected the joint, with the express object of exciting an acute arthritis, which being combated in the usual manner, led to the removal of diseased action from the articulation, and no steps were taken to prevent this excessive inflammatory process. Now, it is evident that, as in hydrocele, the radical cure is often effected, not by inducing violent inflammation of the sac, but by modifying its diseased secreting action, so we should endeavor to induce merely a slight change of action in the synovial lining of the joint; and adhere as closely as possible to the rule laid down by Velpeau and Cabaret to procure in shut cavities, containing effused fluid, an irritation which should be constantly adhesive and never purulent.

"By the method which I recommend, the fluid is forced upwards from the articulation to the synovial bag above the joint lying on the anterior surface of the femur, and when the fluid is withdrawn and only half an ounce of iodine solution injected, the opposed surfaces of the sac are brought into contact and retained in that position by the gentle and equable pressure of a well applied wet bandage. By this means air is prevented entering the joint, the ejected fluid is spread out evenly over the whole synovial surface, and becomes still more diluted by admixture with the secretions of the parts, and a healthy action taking place, excess of exudation and engorgement are prevented, and it is not unlikely that adhesion occurs in the opposed surfaces of the dilated pouch in front of the femur. This result is still further favored by retaining the joint in an immovable position by bandaging it to a strait splint, and by keeping the patient upon cooling diet. Bonnet recommends us to push the trocar down in a perpendicular direction from the front of the tumor till it strikes the femur. I see no advantage in piercing the synovial membrane in two places, and in wounding the femur; nor have I followed his other direction to inject a quantity of iodine solution equal to the amount of fluid drawn off. In my practice I have thrown in only two drachms of strong tincture mixed with two of luke-warm water.

"In conclusion, I would wish it to be understood, that I do not advise the above line of treatment to be pursued, except in simple uncomplicated hydrarthrosis, that has resisted all other remedies, and that has led to loss of use of the limb, or has prevented the patient earning a livelihood, and enfeebled his constitution by protracted suffering."

ART. 109.—*An improved method of amputation at the Ankle-joint.* By Mr. QUAIN, Surgeon to University College Hospital.

(*Medical Times and Gazette*, Oct. 10, 1857.)

The case in which this improved method of amputation was exhibited, and the remarks which accompany it, are reported by Mr. Vincent Jackson, Mr. Quain's house-surgeon.

CASE 1.—E. B—, æt. 21, a soldier in the Guards, native of Lincolnshire, fair-haired, and florid in complexion, a full-bodied and well-proportioned young man, gave this account of the disease of his foot:—Eleven months ago, whilst jumping at leap-frog, having pitched on the point of his left foot, he felt in it at the time a pricking sensation, but not enough of uneasiness to cause him to desist from playing. Pain, however, came on during the night, and next morning the foot was swollen. Cold applications were used, but as he got no better he was soon taken into the regimental hospital. There he continued under treatment for nine months. The foot became in the mean time much swollen; abscesses formed; and he was discharged from the regiment and the service on account of the persistence of the disease of the foot. When this person was admitted to the hospital, at the end of last April, the left foot was much swollen over the tarsus, and there were several ulcerated openings through the skin. When the tarsal and the tarso-metatarsal joints were moved he felt much pain. But the ankle-joint (tibio-tarsal) did not give that or any other indication of disease. The sinuses extending from the ulcerated openings on the surface, at the inner side of the foot and on its dorsum, were found to lead to the head of the astragalus, to the scaphoid and the cuneiform bones, and to the junction of these last with the metatarsal bones. Another sinus opening beside the tendo-Achillis was believed to conduct to the joint between the astragalus and the os calcis.

The foot was removed. Everything went on well afterwards without interruption. The ends of the tibia and the fibula were well covered with a pad of the planar integument and muscle; and the patient was walking about with crutches in three weeks after the operation. On examination of the foot after its removal, the disease was found to extend through the tarsal bones, and their joints with one another and with the metatarsal bones. The peroneo-tibial surfaces of the astragalus alone of the tarsal articular surfaces were unaffected, but the disease on the head of that bone extended up to the anterior ligament of the ankle-joint. The inter-osseous ligament connecting the astragalus and the os calcis was reduced to a pulp, while the articular surfaces at each side of it were wholly disorganized.

The second case was in the same ward at the same time. These were the particulars of it:—

CASE 2.—Richard I—, æt. 20, states that in early childhood he suffered from enlarged glands of the neck; that fourteen months ago he felt pain in the right ankle in consequence of the pressure of a tight boot. The pain was followed by swelling. When he came to the hospital there was a good deal of deformity of the foot from swelling about the ankle. The swelling was most prominent on both sides. At the inner side it was mainly below the margin of the inner malleolus and over the tarsus; on the opposite side it was in front of the outer malleolus. Both the lateral swellings were connected by an elevation extending across the foot in front of the ankle-joint. Incisions were made, and healthy pus escaped in large quantity. Subsequently diseased bone was detected extending across the foot, and involving all the tarsal bones at their joints, including the joint between the astragalus and the calcaneum. The foot being amputated, the patient, whose health before then was very low from the constitutional effects of the disease, now rapidly improved. The condition of the stump was likewise very satisfactory in every respect. Afterwards the patient was sent to the country, to the convalescent hospital, for a month, and on his return his whole aspect was that of vigorous health. At the same time it was interesting to observe that the muscles of the calf of the leg, on the

side from which the foot had been removed, had partaken in the general increase of the muscular system.

October 1st.—This young man walked into the hospital to-day to show himself. He is in excellent health; he walks well with a boot, the foot-part of which is stuffed; he bears firmly on the end of the stump. The stump itself is sound at every point, and in no degree tender to pressure anywhere. The date of the operation was May 14th.

The following observations are taken from the notes of Mr. Quain's clinical lecture upon the foregoing case: "It appears to me, and indeed it has always appeared to me, that the chief advantage of the operation for removing the foot at the ankle-joint, is due to the fact, that the patient is enabled in progression afterwards to bear directly upon the stump. After any other amputation higher up—that for instance above the ankle, which in other respects is equally if not more advantageous, the person cannot bear his weight upon the end of the stump. Ulceration of the integument would follow: while after an amputation at the ankle-joint, with a flap taken from beneath the heel—from structures, that is to say, which are organized for the purpose—with that covering the bones, pressure is sustained by the end of the stump without injury.

"Now as to the plan of performing the operation: When it was first suggested that the flap should be taken from the under surface of the foot instead of being made from the front and sides of the joint, as previously practised, Mr. Syme, the author of the suggestion, advised that an incision should be made from one malleolus to the other beneath the *os calcis*. But the dissecting back the concave flap thus marked out from the projection of the heel is a tedious process. One has to dissect in a confined space over the irregularities of the bone; and it has often happened that the integuments have been perforated behind the heel. Moreover, if you read the histories of cases fairly reported, in which the operation has been performed in that way, you will find that counter openings were subsequently required to evacuate pus collected in the cup-like flap. It is in consequence of these evils that I was led to operate in the manner you saw in these cases. Thus, after the incision from malleolus to malleolus under the *os calcis*, I make a straight incision at right angles with the first, to the back part of the heel on the outer side of the foot, a little above and parallel with its outer margin—between, therefore, the point of the outer malleolus and the margin of the foot. This plan facilitates the dissection from the *os calcis*, and hastens the operation. Independently of the direct advantage of this method of operating, I may remind you, by way of answer to possible objections, that the bloodvessels (anterior tibial and posterior tibial) as well as the thicker soft structures, lie at the forepart and inner side of the ankle-joint, and beneath the foot. It is upon the careful preservation of these parts that the nutrition and the firmness of the stump depend. At the outer side, on the contrary, the *os calcis* is covered only with integument, while the slender bloodvessel, the end of the peroneal artery, as it runs along the periosteum, is injured, probably made useless during the dissection. Hence the incision through this part, while it sets free the flap all around and hinders the bagging of purulent matter, does not interfere with any important structure.

"It may be mentioned, too, that in the recorded cases of the amputation as usually performed, the outer part of the flap, the part now in question, had often been mentioned as having sloughed. This fact is accounted for by the conformation just referred to."

As no mention is made in the foregoing observations of other parts of the operation, it perhaps should be stated that Mr. Quain makes the plantar part of the principal flap short, though long enough to cover fully the end of the tibia; and that he forms an anterior flap, which in the cases above related met the larger one easily. He dwells on the advantage of so cutting the edges of the two flaps, by bevelling the parts beneath the integument, that they shall in the dressing meet skin to skin as far as possible. This is done with a view to avoid the need for the formation of much new skin during the cicatrization.

Mr. Jackson likewise mentions, that with the same view of facilitating the process, he has seen the operation performed with an incision directed obliquely backwards from the malleoli to the point of the heel. This plan, of course, removes the difficulty by omitting the only difficult part of the operation; but the structures from the sole of the foot, those "organized for the purpose" of bearing the weight of the body in progression, are excluded from the flap. The importance of using the structures beneath the heel was enforced by Mr. Quain some years ago, in a "Clinical Lecture on 'the places of election' for Amputations of the Lower Limb," published in the "Medical Times," vol. iii. (new series) p. 659, and referred to in his recent clinical lecture. In laying down general principles applicable to the amputations of that limb, he there says: "That in no case where the operation is made through the leg or the thigh, can the person afterwards rest easily the end of the stump upon the artificial support. It is only where a part of the sole of the foot is made to cover the bone that the end of the truncated limb will sustain without pain or injury the weight of the body. In other words, it is only the structures which are organized for the purpose that will sustain the pressure in these circumstances without causing pain or suffering ulceration." And again, in the same lecture, these words occur: "I may state that even when this modification in the method of performing the amputation was first made known I took occasion to perform it, and I then advocated the plan on the same grounds that I now offer in recommendation of it." The date of the publication from which these extracts are taken is 1851. Mr. Jackson adds, that the operations which he saw performed, without including in the investment of the bone the structures here adverted to, did not seem to promise a very satisfactory result.

ART. 110.—*Case of Double Talipes Varus, in which the Cuboid Bone was partially removed.* By Mr. SOLLY, Surgeon to St. Thomas's Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, vol. i., No. 3, 1857.)

The sufferer in this case was a South American, æt. 21, a stout, muscular man, of lymphatic temperament, difficult of control, and particularly sensitive to pain. Both feet presented perfect specimens of the deformity, the left being, however, much the worse, being shorter and more inverted than the other. None of the muscles of the lower extremities were perfectly developed. The treatment first commenced (June 7th, 1852) with the division of several tendons, as well as the plantar fascia, and the application of mechanical apparatus; it was continued through the two following years, during which period two more divisions of tendons were made, and a variety of apparatus (including all the ordinary, as well as a variety of novel, forms) employed. The result was good as regarded the right foot, but most unsatisfactory with the left. Such, however, was the peculiar character of the patient, such his impatience under pain or restraint—leading him, as it did, to loosen the apparatus and remit the pressure on every opportunity—that Mr. Solly considered himself warranted in adopting the suggestion of Dr. Little that he should remove the cuboid bone, which seemed the bar to the ultimate success of the case. On June 11th, 1854, Mr. Solly accordingly proceeded to remove nearly the whole of the bone, cutting quite through it, and opening the articulation with the metatarsal bone of the little toe, but not that with the os calcis. So complete was the effect, that the foot could immediately be bent beyond the mesial line in the outward direction, and the finger placed in the chasm was painfully pinched when the foot was so turned. The good effect of the operation, however, was much marred by the loss of three weeks which expired before pressure could be applied. The procedure was not attended with any constitutional disturbance, and the wound healed in fourteen days. In December, 1854, the tendons of the tibialis posticus and flexor communis were again divided; since that period instruments have been relied on for the completion of the cure. The feet are now (January, 1857) fairly on the ground, and the patient bears his weight upon them, and walks with the aid of a stick. The author concluded by observing that although the operation for the removal of the cuboid

bone had undoubtedly greatly facilitated the cure in this particular case, yet he did not consider the effect produced to be such as to encourage the profession to perform the operation, except in some few old and obstinate cases which might have resisted every other treatment; and in the event of a recourse to such a procedure, Mr. Solly advised the removal of the entire bone, as tending to produce a more permanent effect than resulted from the operation in this case.

ART. 111.—*Excision of the Os Calcis by an Improved Method.* By Dr. MORROGH, of New Brunswick.

(*New York Journal of Medicine*, July, 1857.)

CASE.—“On the 1st day of October, 1854, I was requested to attend Mr. Elsworth Dansbury's son, for necrosis of the right os calcis. The patient was twelve years old, of fair complexion, and bright intellect; he was very much emaciated from the disease; both parents were healthy, and seemed robust. They gave the following history of his case: About nine months prior to my seeing him, the boy got his foot slightly squeezed between two railroad cars; he did not complain much at first, but, after the lapse of a week or two, the ankle and foot became swollen and painful. Medical assistance was sought, but the disease increased, and several abscesses broke, leaving cloacæ, which continued to discharge. The ankle continued very painful, and caused intense suffering when placed on the ground; hectic fever supervened, and the boy became peevish, fretful, and very much reduced. This was his condition when I first saw him. The integument round the ankle was livid, glazed, and tumid; it was perforated by three or four fistulous openings, which discharged an ichorous pus; various parts of the calcaneum could be reached by a probe through these openings. It was felt to be denuded and roughened; no other bone could be felt in this condition, although the swelling extended for some distance beyond its limits; I proposed the operation of excision, as a means of avoiding the humiliating alternative of amputation. The parents readily assented; and on the 24th of the same month the operation was performed in the following manner: Dr. A. T. Taylor, of this city, Dr. Pool, of South River, and several of the patient's friends, being present: The boy was placed on his left side, on a table, and rendered insensible with chloroform. A vertical incision was made over the posterior extremity of the os calcis, extending from the superior to the inferior surface, and continued along the inferior surface of the bone, to its articulation with the cuboid, taking care to keep outside of the plantar artery. The incision was then carried upward to a short distance above the superior surface of the bone, without wounding the peroneal tendons; this incision described a square flap on the outside of the foot, which was dissected up, and the tendo-Achillis separated close to its attachment. A strong narrow scalpel was then introduced under the peroneal tendons, and made to separate the calcaneo-cuboid articulation, without severing the tendons, or the artery beneath. The knife was then introduced between the upper surface of the bone and the astragalus, and made to cut the interosseous ligament, and gradually separate the articular surfaces. The calcaneum was then rotated, so as to bring its upper surface outward till the internal made its appearance, when the soft structures were carefully separated, principally by the handle of the scalpel, thus completing the operation. After this mode of proceeding, we had the satisfaction of seeing the posterior tibial and plantar arteries pulsating in perfect integrity, while the tendons of the peroneal muscles, as well as those of the flexor longus pollicis, flexor communis digitorum, and tibialis posticus were uninjured. No ligatures were required, the flap was approximated, a piece of flat sponge applied over the wound, and a gutta percha splint, previously moulded over the instep so as to keep the foot extended. The operation was followed by a total cessation of pain and febrile action.

“The boy improved rapidly in health; the wound healed mostly by adhesion, the rest by granulation. The cavity partly filled up by what I supposed to be fibro-cellular tissue; and in two months after the operation the boy could run

swiftly. At the present time, he wears a small pad in the shoe under his heel, and does not experience the least inconvenience from the deficiency of the bone."

ART. 112.—*Exsection of the entire Os Calcis.* By Dr. CARNOCHAN, Surgeon to the State Hospital, New York.

(*American Medical Gazette*; and *Dublin Medical Press*, Oct. 7, 1857.)

CASE.—John M—, laborer, native of Germany, æt. 28, was admitted into the State Emigrants' Hospital, on the 11th of October, 1854, with caries of the posterior part of the foot. According to his statement, he is of scrofulous parentage, but is himself healthy, with the exception of the local disease, and the apparent effects of prolonged irritation acting upon his system. In October, 1852, after exposure to severe cold, he was attacked with severe pain in the whole lower limb. The region of the ankle and heel became swollen, red, and exceedingly painful; matter in time formed over the os calcis; and this being evacuated, the bone could be felt with the probe, bare, and extensively diseased.

Upon his entrance into the hospital, the ankle and the posterior part of the foot were much swollen; the region of the heel and instep was hard, enlarged, and purple on the surface. Three sinuses existed upon the outer and upper portion of the posterior part of the foot, the outer sinus allowing a probe to pass deeply into the bone. Since his attack he had been unable to follow his vocation or to put his foot to the ground, and could walk only by the aid of crutches. His general health had deteriorated from want of exercise and from the continuation of the discharge. He was immediately put upon tonic and antistrumous remedies—quinine, iod. potassium, and Lugol's iodine solution being alternated, while emollient application were used upon the diseased parts, and the recumbent posture enjoined. Therapeutic means proved of no avail; the patient rather retrograded than gained; and, fretted continually by his disease, at last demanded an operation to relieve him from his painful and (as he termed it) miserable condition.

This alternative being decided upon, the question arose as to amputation of the leg, or exsection of one or more bones of the tarsus. From the external appearance of the part, it might reasonably be supposed that more bones than one were affected; and with this opinion, amputation at the lower part of the leg was suggested by some as being the most proper proceeding. The sinuses, however, led to the os calcis, and the probe could not detect denuded bone elsewhere. It was finally decided to exsect this bone first, and to proceed to amputation, if the other tarsal bones were found sufficiently implicated.

On the 1st of December, 1855, the patient was brought into the amphitheatre, and chloroform administered. He was placed upon the table, with his face downwards, the diseased foot and the lower part of the leg projecting over the margin of the table. The assistants being properly placed, an incision was made on the outer margin of the tendo-Achillis, commencing about an inch above the external malleolus, and extending downwards to the lower and outer part of the heel, to a point half an inch above the plantar border of the foot. From the termination of this incision another was made to extend along the outer aspect of the foot to within half an inch of the posterior extremity of the fifth metatarsal bone. From the upper part of the first incision another was made directly across the lower part of the leg, terminating a little within the inner margin of the tendo-Achillis at its upper part. The two flaps thus formed were reflected—the outer from the external aspect of the os calcis, the inner from its internal surface, carefully protecting the posterior tibial artery and nerve, as well as the adjoining tendons. With a blunt-pointed bistoury, the tendo-Achillis was divided close to its insertion. The tendons of the peroneal muscles were then carefully separated from their tendinous sheaths and hooked to one side; the same precaution was also taken with the tibialis posticus, the flexor communis longus digitorum pedis, and the flexor longus pollicis pedis. The external lateral ligaments were then divided, and the joint between the astragalus and os calcis entered from behind. Using now the

calcis as a lever, the interosseous ligament, the calcaneo-cuboid, and other ligamentous connections between the different bones with which it is connected were divided, and the exsection of the bone completed by carefully dividing the strong ligament running under the tendons of the tibialis posticus and the flexor longus digitorum pedis, between the internal malleolus and the small process upon the inner and anterior part of the os calcis. The different steps of the dissection are much facilitated by making the assistant, who has charge of the leg, flex it slightly upon the thigh, in order to relax the peronei and the flexor muscles of the foot, and also by everting or inverting the foot. By these movements, the ligamentous bands of union between the bones are stretched and made more tense. The articular surfaces of the bones in contiguity to the calcaneum were entirely healthy. The lips of the wound were brought together by points of interrupted suture, and the wound dressed so as to heal by first intention.

In performing operations on the lower extremities, the principle may be laid down, that the incisions should be fashioned so as to leave the resulting cicatrices removed from the influence of pressure or friction during locomotion. This object is obtained by an operation projected upon the plan above described. The cicatrix does not, in the slightest degree, encroach upon the plantar aspect of the foot; consequently, during the movements of progression, it is not exposed to the contact of any surface by which irritation could be produced.

Low diet, with anodyne draughts at night, were prescribed for a few days. The tonic treatment was again resumed and continued. The wound gradually healed, continuing to discharge, from a point under the external malleolus, a considerable amount of sero-purulent matter. This gradually ceased, and, three months after the operation, the cicatrix was sufficiently hard to allow the patient to put his foot to the ground and walk.

The pathological condition of the os calcis is such as to place it beyond the reach of restoration by internal or constitutional means. The bone is very considerably enlarged by the inflammatory process which has pervaded its whole extent. The greater part of the bone, and particularly the posterior and outer portions, are in a state of confirmed caries. The more anterior portions, and those parts not affected by actual ulceration, are expanded and in a state of sub-inflammation.

December, 1856.—The patient soon became strong and healthy, and, at the present time, with a padded heel to his shoe, he walks with but little impediment, and without the slightest inconvenience from the cicatrix.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 113.—*On the presence of Sugar in the Urine of Pregnant, Parturient and Puerperal Women.* By Dr. KIRSTEN, of Leipzig.

(*Monatschr. für Geburts.*, June, 1856; and *Med.-Chir. Review*, Oct., 1857.)

THE researches of Blot (*vide* "Abstract," XXV. p. 304) on the presence of sugar in the urine of pregnant, parturient, and puerperal women, suggested to Dr. Kirsten the expediency of independent inquiries with a view to the verification of Blot's results. M. Blot arrived at the conclusion, that the presence of sugar in the urine of women under these circumstances was a physiological phenomenon; and that its disappearance was the result of an intercurrent pathological condition. Dr. Kirsten observes, that if this conclusion were true, we should possess in the disappearance of the sugar a tolerably sure measure of the condition of a puerperal woman, since this would indicate a commencing pathological disturbance, whilst its return would indicate reconvallescence. Dr. Kirsten examined the sugar relations in two women. His observations do not altogether accord with those of M. Blot: they rather point to the reverse condition, namely, that sugar is present in greatest quantity in the urine of puerperal women when the milk-secretion—whether through a pathological process, or the weaning of the child—is arrested. Thus he observed in several puerperal women whose children had died, that on the second, third, or fourth day after the death the sugar appeared in greatest plenty. After this time, the quantity fell in the same degree as the milk diminished; but in four cases it could be demonstrated twelve days later. In three cases in which the patients were seriously ill in the puerperal state, and in whom the milk-secretion was almost null, the sugar was found in greatest quantity. One of these last women had suffered from common oedema during pregnancy. The examination of her urine revealed copious albumen, which diminished with the oedema, without disappearing altogether. Towards the end of pregnancy traces of sugar became apparent. She was delivered easily of a badly nourished child. Repeated attacks of peritonitis followed. The milk-secretion was very scanty, and the milk very thin: sugar was present in the urine in abundance. In the second patient, who suffered from peritonitis, followed by pyæmia, Dr. Kirsten was able to detect sugar up to the day before her death, this substance having been present in great quantity at the beginning of her illness. The third case was quite similar. On the other hand, he was rarely able to discover more than mere traces of sugar in the most healthy women, who had well nourished children and a superabundance of milk.

It hence appears that glycosuria belongs rather to pathology than to physiology. The key, Dr. Kirsten thinks, is to be found in the most recent researches of Bernard. This physiologist has shown that the formation of sugar in the liver is especially apparent when the abdominal circulation is increased, and the temperature rises. The biliary matter chiefly turns into sugar at a temperature of 40° cent. No time was more favorable for this transformation than

gestation, when the abdominal circulation and temperature are always raised to the necessary point for sugar formation; whence we ought always to expect glycosuria in pregnant women. But as this is not the case, we are obliged to conclude that the greater quantity of sugar produced at this period is wanted for the nourishment of the child, so that it cannot be excreted. It would be interesting, with a view to the verification of this hypothesis, to examine the urine of women whose children may die, as quickly as possible after their death.

During the puerperal week the abdominal circulation is lessened, and the afflux of blood takes place towards the periphery, as is evidenced by the milk secretion and sweats. This condition would not be favorable to the formation of sugar.

ART. 114.—*On the use of Chlorate of Potass in Pregnancy.*
By Mr. GRIMSDALE, Surgeon to the Liverpool Lying-in Hospital.
(*Liverpool Med.-Chir. Journal*, No. 2, July, 1857.)

Every one engaged in midwifery practice will have met with cases in which the child is carried successfully into the viable period, but some time between this and the full term of pregnancy, is born still, or very weakly; and this perhaps for several successive pregnancies, without any external or accidental cause to explain the premature death and delivery, and with no evidence of syphilitic taint in the parents.

It is in such cases that Mr. Grimsdale (in accordance with a suggestion thrown out some years ago by Dr. Simpson) has been in the habit of prescribing chlorate of potass with some apparent benefit.

CASE 1.—Mrs. Darbyshire, a stout, healthy-looking woman, *æt.* 34, was delivered of a female child, after a labor of eleven hours' duration, in the Lying-in Hospital, on the 24th March, 1852. During labor there was a large discharge of very offensive, dark-colored muddy water; the nurse told me she filled two chamber-pots with it, besides what escaped in the bed. The child was with difficulty made to breathe. It was jaundiced from birth, and died of hemorrhage from the umbilicus, on the seventeenth day.

The placenta was diseased; portions of its maternal surface were seen to be of a pale yellowish color, and these were firm to the touch, and penetrated nearly to its foetal surface; at least one-fifth of the bulk of the placenta must have been occupied with these firm pale portions. The centre of each patch was firmer than its circumference, and it seemed to pass insensibly and gradually into healthy placental structure, having no accurately defined boundary. On the maternal surface were also several stellated patches of vessels, distinctly gritty to the touch.

Dr. Inman kindly examined this placenta under the microscope, and he did not regard the changes observable in it as due to inflammation, neither was it an instance of fatty degeneration. This woman had had four previous pregnancies, in which she had been attended by a midwife at her own home. The children were all still-born, and said to have been yellow. Of the state of the after-births I could learn nothing satisfactory.

About the middle of April, 1853, the patient came to me, stating that she was five months in the family way, and would be glad if anything could be done to avoid the birth of another diseased child. I gave her chlorate of potass 5 grains three times daily, to be increased in a fortnight to 10 grains. She continued this with but little intermission to the time of her delivery, on the 13th of August, when she gave birth to a healthy child, which is now (October, 1855) living and thriving. The placenta was large, and quite healthy-looking. I may remark, that before commencing the chlorate of potass treatment, I made careful inquiry as to the probability of any syphilitic taint in either husband or wife, and could detect nothing in their history to warrant any suspicion.

CASE 2. Mrs. Egan, a poor woman, *æt.* 21, pale and rather delicate looking, presented herself at the dispensary of the Lying-in Hospital, in April, 1853, and stated herself to be four months in the family way. She said that she had

been four times pregnant before, and had on each occasion given birth to a dead child. Her labors had been of no great severity, and of moderate duration; the midwife who attended her told me that the children were small, and appeared to have been dead some days; the after-births, she said, were "pale in parts, and queer-looking." The husband was a steady working man. I saw him; he looked strong, and denied having had syphilis.

The former pregnancies had been attended with no pain. I ordered chlorate of potass, 20 grains a day. She continued this for four months. On the 5th September she was delivered of a fine healthy child, which is still (October 10th) thriving and without ailment. The placenta was large and healthy.

CASE 3.—Mrs. D—, æt. 33, of spare conformation, hysterical temperament, became pregnant about six months after her marriage. After quickening, the movements of the child were distinct, and increasing in power up to the end of the sixth month of her pregnancy; she then began to feel them decidedly weaker; not much notice was taken of this, as she had no pain, until in about three weeks she ceased to feel any movement. I saw her, and on examining with the stethoscope, could hear no foetal heart sound. In about a week from this she gave birth to a dead child, the cuticle of which was beginning to desquamate. It was well formed, but the skin was wrinkled, and it looked ill-nourished. The placenta was in parts pale, firmer than natural, and its vessels in these parts deficient in blood.

In March, 1853, I again saw her; she was then pregnant three months and a half. I recommended her to take the chlorate of potass at once. She began with 15 grains in the day; she had only taken it three or four days when she complained that it made her head ache. I ordered its discontinuance, but in a few days again prescribed it without her knowledge; again she complained of intense headache, and I left it off for a month. She tried it once more, but declared it gave her a most fearful headache, which she could not bear. This second pregnancy followed as nearly as possible the same course as the first, and with the same results.

In December, 1853, she was again pregnant; I saw her when she was four months advanced, and wished her to try the chlorate in smaller doses. She took 3 grains thrice daily with impunity; this was continued for three weeks or a month; she then increased the dose to 4 grains, and subsequently to 5 grains. All seemed to go on well. The movements of the child, she said, were considerably stronger than in her former pregnancies.

When well into the seventh month, she was riding out in her carriage, a low, four-wheeled phaeton, when another vehicle ran into them, smashed the carriage; and upset its occupants. My patient was of course much frightened; she felt, she stated, a violent commotion in her inside for some hours, but after that day did not feel any movement. She was from home at the time: in two or three days she returned; I then saw her, could detect no foetal heart-sound, and believed the child to be dead. In ten days from the date of the accident labor came on, and she was delivered of a dead child.

Nothing could be more marked than the contrast presented between this child and its placenta, and those of the two former deliveries. The child was plump, and had all the appearance of a healthy seven months' child; the placenta was everywhere soft and spongy and its vessels seemed to have been uniformly full of blood.

This lady became pregnant for the fourth time in the beginning of October, 1855. About the end of the third month she commenced to take the chlorate in 3-grain doses, and gradually increased it to 5 grains, thrice daily. She was occasionally compelled to intermit its use, in consequence of the headaches, as before; but with these exceptions it was persevered in until the full time of pregnancy, when she was delivered (June, 1856) of a healthy male child, now living (June, 1857). The placenta was quite healthy.

CASE 4.—Mrs. —, a stout, healthy-looking woman, came to me in November, 1854. She was between three and four months gone in the family way. She had been seven times pregnant before, but had never given birth to a living child. One child she carried to nearly the full time; five had been born between the sixth and eighth month, and one was aborted at an early period of

pregnancy. I ordered her to take the chlorate in 5-grain doses, thrice daily; and after the fifth month especially enjoined the immense importance of rest; this latter injunction she seemed determined not to comply with.

She went on well until February, 1855, frequently stating that she felt the movements of the child stronger than usual. On the 12th, after having kneaded a large pan of dough, and performed sundry other laborious domestic exercises, labor came on unexpectedly, and she was delivered in five or six hours of a living child—the first of all her children that had ever breathed. It was a breech presentation: the child seemed of about six and a half or barely seven months' development, and only lived a few hours. The placenta was healthy.

CASE 5.—Jane D—, æt. 36, presented herself at the Lying-in Hospital, September 12th, 1853. She said that last year she had miscarried at six months, without any apparent external cause. The child had been dead some time: she learned this from the midwife who attended her. She was now four months advanced. She commenced the chlorate 15 grains in the day, continued it on and off during the rest of her pregnancy, and was delivered of a healthy child at full time.

I have notes of ten other cases similar to this last. I do not think they are worth much as evidence; they will, therefore, scarcely add to the interest of this paper, and I refrain from giving the details.

In two cases apparently likely to have received benefit from the chlorate, and in which it was exhibited as usual, I failed to perceive any favorable result. In one of the cases, death of the fœtus, and miscarriage at the seventh month, occurred, as it had done in three previous pregnancies. In the other, the child was born dead and ascitic, at eight months and a half, the placenta being hydropic. The mother had, before taking the chlorate, given birth to four stillborn children in succession.

Of the nature of the diseased action in these cases, I am not prepared to say much. It would seem to be located primarily in the placenta, and to cause the death of the child secondarily, by the consequent effects on the placental function. The morbid appearances in the placenta would seem to be tolerably uniform: I can see no evidence of their inflammatory nature; and there certainly were no previous symptoms indicative of inflammation in any of the cases.

ART. 115.—*What is the Natural Position of a Woman during Labor.* By EDWARD RIGBY, M. D.

(*Lancet*, Oct. 3, 1857.)

This question was suggested to Dr. Rigby by the perusal of an interesting paper by Dr. Schütz, in the "Transactions of the Berlin Obstetric Society" (*Verhandlungen der Gesellschaft für Geburtshülfe in Berlin*), No. 4, p. 37, on the subject of concealed or secret parturition.

Dr. Schütz points out a fact which, considering the circumstances under which parturition in secret must usually occur, is perhaps, after all, not so singular as on first sight it might appear to be. From the result of extensive observations, particularly in a special work upon this subject by Dr. Cohen van Baren in Posen, it appears that a considerable number of those unmarried females who are delivered in secret go through the process of labor in an unusual position.

Of 100 cases of concealed parturition, which Dr. Cohen has collected, and of which depositions have been taken, fifty occurred with the patient in an unusual position. Thus we may assume, in cases where a woman is alone, and ignorant of the process of labor, that in half of them she will give birth to her child in a position different to that which is ordinarily used by women who have assistance rendered them at this time. Of the fifty cases just alluded to, in thirty the child was born with the patient in a standing posture; eighteen were delivered in a crouching, squatting, or sitting position, and two kneeling.

In fifty other cases which have been collected at Berlin, the position of the patient at the moment of delivery was ascertained only in forty-five, but of

these thirty-two were delivered in an unusual position—viz., fourteen standing, sixteen crouching, squatting, or sitting, and two kneeling.

Although we have no means in England of procuring such data as our more accurate and methodical neighbors in Prussia have, yet it is probable that the experience of those medical men who have had extensive opportunities of observation will fully bear out these facts.

The question, then, which naturally suggests itself is—If a young woman be entirely unattended and uninterfered with during her labor, and therefore left completely to the guidance of her own instincts, what is the position she will assume at the moment of childbirth?

The chief data which we possess respecting the position of women during labor refer almost solely to that, or those, which have been adopted in different ages by civilized or half-civilized nations; but as regards the young girl, European, Indian, or Negress, who has retired into solitude and concealment because new and peculiar pains warn her that her pregnancy is about to terminate, but in utter ignorance of everything beyond this fact; as regards the manner in which this child of instinct will act at the moment of parturition we know but little.

In the earliest periods of civilized life to which history bears record, women appear to have been delivered in a sitting posture, upon a seat constructed for the purpose. Thus in the instructions which the King of Egypt gave to the Hebrew midwives, he is recorded to have said, "When ye do the office of a midwife to the Hebrew women, and see them upon the stools; if it be a son, then ye shall kill him; but if it be a daughter, then she shall live." (Exod. i. 16.) The sitting posture appears to have been that chiefly used in civilized nations from these early times down to the last century, and doubtless suggested the well-known labor-chairs of H. van Deventer and others; and Dr. Smellie mentions (vol. i. p. 203, 4th ed.), that in remote parts of England "the patient is seated on a stool made in the form of a semicircle; in other places she is placed on a woman's lap; and some, kneeling on a large cushion, are delivered backwards."

The supine posture, which is still so common (and, indeed, almost universal) on the Continent appears to have been used in England during the early part of the last century. Chapman (1735) recommends the supine posture for turning the child, which Dr. Rigby scarcely thinks he would have done if he had been accustomed to cases of ordinary labor with the patient lying on her side. Dr. Rigby has the impression also that in Giffard's cases he has met with allusions to the supine posture as that which was adopted during labor.

In Scotland the position on the back or the side appears to have been used indifferently till a much later period. Thus Alexander Hamilton (1775) says (p. 137), that the patient is to be "placed on her side or back;" although his celebrated namesake, Dr. Alexander Hamilton, in 1784, limits the patient's position to being "placed on her side." ("Outlines of the Theory and Practice of Midwifery," p. 208.) Dr. Spence, who published his "System of Midwifery" in Edinburgh in 1784, advocates the position on the side, inasmuch as "by this situation the woman may lie as safe and comfortable as her case will admit of;" but he adds, "though this position seems preferable to the others that I have mentioned, it must be allowed that each of them has very great advantages in particular cases" (p. 151). In speaking of "the position of women during labor" (p. 148), he first alludes to the reclining posture which was adopted in those countries where Deventer's chair was used, and states that it was "nearly the same with that of women when delivered upon the common delivery-chairs used in the lying-in hospitals, and which some imitate by placing the woman to be delivered in the lap of a robust female." "The next position, and one which is pretty much practised in the northern parts of this country, is where women are delivered hanging about the neck of a person as tall, or rather, if possible, taller than themselves, who gently supports the small of the patient's back with her hands, and with her knees fixes the knees of the woman in labor. Other women incline to be delivered kneeling down at the side of a bed or chair, and leaning upon it with their elbows and head" (p. 149).

In treating of this subject, the late C. White, of Manchester, is perhaps the first who has distinctly pointed out that the horizontal posture, especially on one side, is the fittest for a woman to be in during the actual expulsion of the child. "When the business is so far advanced that there is reason to believe the child will soon be born, it is, in my opinion, of great consequence that the woman should be in a horizontal position, and it will be most convenient if she lie upon her side towards the practitioner. Other positions, indeed, such as standing, sitting, hanging by the arms between two persons, half-sitting and half-lying, either upon the bed or the knee of an assistant, may be, and I believe are, often serviceable in expediting delivery, and are therefore extremely proper in slow, tedious labors, except at the conclusion; but I would by no means advise that the child should in any case whatever be born, or the placenta extracted, in any of these positions." (C. White on "Lying-in Women," p. 105.) This quotation contains, in fact, a summary of nearly all we know as to why one position should be better than another for a woman during the act of parturition; and his observations apply with peculiar force to where the patient is in a sitting position, as it is a well-known fact that the expulsion of the child while the mother is in this position, especially if at the same time she has the means of fixing her extremities so as to strain with greater effect (as when on a labor-chair), is especially liable to be attended with laceration of the perineum: thus Tolver remarks, that "at Brussels, where Deventer's chair is indiscriminately used, lacerations of the fourchette and perineum are very frequent." ("On the present State of Midwifery in Paris," by A. Tolver, 1770, p. 9.)

Mr. White has, however, discussed the very point in question, in describing the manner in which a young woman might be supposed to act during labor, if out of reach of any assistance. "Should a straight, healthy young woman, who had never suffered from improper dress, inactivity, or unwholesome diet, be seized with labor-pains upon an open common, totally unattended, and with no assistance near, she would for some time walk about, then sit down to rest, then rise and walk again, till, for her own ease and the safety of the child, she would find it necessary to lie down."

Professor Naegelé, of Heidelberg, feeling much interest in this subject, made the following experiment, to determine as far as possible how a young woman, who was entirely ignorant of parturition, would act during this process if left completely to herself. A young unmarried girl, who, from her youth and extreme simplicity appeared to be a favorable subject for the experiment, was selected at the hospital. Her room was furnished with a few chairs, a bed, a sofa, and also a labor-chair. All allusions to her labor were carefully abstained from. During the first half of labor she took her pains in a variety of ways, sometimes standing against the wall, at others leaning over the back of a chair, &c. When tired of standing, she sat down, and could not at first make up her mind, which was most comfortable, a chair or the sofa. One trial of the labor-chair was quite conclusive to her mind, and she did not repeat the attempt. As the straining pains of the last stage came on she began to lie down, first on the sofa, then on the bed, which she ultimately preferred, rolling first on one side, then on the other, or taking her pains lying on her back; but when the expulsion of the head commenced she turned upon her left side, and the child was born in this posture. The result of this experiment chiefly influenced Professor Naegelé in adopting the position on the left side, or English position, as it is called abroad, and which had been introduced at Vienna some years previously by the celebrated Boer, after his visit to this country.

A West Indian, at the author's request, sought information on this subject from an old planter who had lived in Jamaica, many years before the emancipation of the slaves there; and his observations, although not in accordance with the opinion which Dr. Rigby has given respecting the position which a woman takes during the expulsion of her child, are too interesting to omit here. He remarks that "there is no natural position, but positions—no more than for a man with colic, for instance, the West Indian 'dry belly.'" "Idleness or exercise produce their consequences there as elsewhere. At the estate many women died and many children in parturition. The cause ap-

peared that the women were ordered to go to the hot-houses, or allowed to do little or no work some weeks, perhaps months, before lying-in. An order given that they should work up to the latest before they were put to bed had the effect that no women died in childbirth, and no children by difficult delivery. In place of a loss of women and children that year, forty to forty-four children were added to the estate, and the premium allowed by the county to the overseer was awarded to —, which he generously distributed among the mothers. Anything African was forgotten, for few, probably no women were imported; girls only, who consequently produced their children *à la Creole*, or *à l'Anglaise*, or *à l'Ecossoise*. Civilization has put the English on their sides—the French on their backs. A girl or woman in the bush would know no natural posture other than turning, lying, rolling, or remaining in that posture in which she had least pain." This, therefore, seems to confirm the observations of Dr. Schütz and of Dr. Cohen van Baren, that, after all, it appears to depend in great measure on accidental circumstances which determine what position an unassisted woman assumes when seized with the violent pains which effect the expulsion of the child; that in a state of nature, and also in civilized life when deprived of the ordinary arrangements and conveniences for her labor, she will be influenced by a variety of circumstances. If the labor be long and tedious, and she be considerably exhausted, she will almost certainly have assumed the recumbent posture long before the expulsion of the child. On the other hand, if the process has been quick, she will continue in the standing, kneeling, or other postures, as mentioned by Drs. Schütz and Cohen van Baren, until the end; but that when enjoying the comforts and attendance which belong to civilized life, she will, in great measure, be guided by the arrangements which are made for her confinement, and will assume that posture for which they are specially adapted.

ART. 116.—Case of Unconscious Delivery. By Dr. GEORGE SMITH, Residency Surgeon, Hyderabad, Deccan.

(*Indian Annals of Med. Science*, April, 1857.)

The case here recorded is another proof that the whole process of labor may be carried on and completed without sensible uneasiness.

CASE.—Mrs. — was daily expecting her confinement. On the 24th of April last, I was sent for suddenly; and, on reaching the house, found the child born and lying below the bedclothes, close to the body of its mother; the cord was entire, and the placenta within the vagina; the delivery had taken place suddenly. During the night preceding her delivery, this lady had felt quite well, she rose several times to attend to her sick child; about 5½ A. M. she walked from her house to the bungalow in which she was confined. When she reached the bungalow, she lay down upon the cot, and experienced a very slight sensation, as if her bowels were about to be relieved—a feeling, as if something had touched her body followed, and caused her to ask the ayah to lift the bedclothes; when, to the surprise and alarm of both, the child was found entirely extruded. Mrs. — was awake, and yet so little was her notice attracted by her feelings, that the delivery took place unconsciously. Had she been standing or seated on her night-chair, the result would, probably, have been instantly fatal to the child. Had she been asleep, the child, I am satisfied, would have been suffocated. This was her second child, her first was born with the usual pains, after a labor extending over six hours. I have the most implicit confidence in the patient's statement, having made searching inquiries into the case. The child, a female, was a little, but not much, undersized. Dr. Montgomery relates an instance of unconscious delivery during sleep; this case is still stronger, in proof that delivery may, at times, take place unconsciously, for the patient was awake and expecting hourly her confinement, consequently alive to the slightest approach of symptoms indicating the commencement of the parturient action. This case has a double aspect, one medical, the other medico-legal. I have seen females (not primiparæ) delivered within half an hour of the recognized commencement of uterine action, and with what I considered the minimum amount of uneasiness, through the

whole of which the woman might have slept undisturbed; but the expulsion pain, causing the extrusion of the head, was always so well marked as to have roused the patient had she been in ordinary sleep.

ART. 117.—*The Effect of Prolongation of Labor upon the Mortality of the Mother.* By Dr. J. MATTHEWS DUNCAN.

(*Edinburgh Medical Journal*, July, 1857.)

The proposition which Dr. Duncan endeavors to establish, is that the duration of labor is only an inconsiderable part of the many causes (single or combined) of the mortality of women in parturition and childbed.

"There is no obstetrical doctrine more deeply impressed on all the valuable literature of our profession than this, that the mere duration of labor, considered in itself and apart from other causes of danger liable to spring up as the process becomes protracted, is of little importance so far as recovery and life of the mother are concerned. The doctrine is embodied in the ever-recurring inculcation of patience, as the highest virtue of both mother and attendant, in many and various circumstances of distress during labor. Sometimes it is expressed in an apothegm, as 'Meddlesome midwifery is bad;' at all times it is diligently instilled into the minds of young midwives and accoucheurs. Unlike our first proposition, a comparatively barren theorem, this is one of the best recognized and most valuable doctrines in obstetrics. It is one, therefore, of the utmost consequence to defend and confirm.

"The proposition does not affirm that the mere duration of labor is of no importance; quite the reverse. Far less does it affirm that the duration of labor, with the accompanying pain and struggles, is not a very considerable element in the history of every case. It says nothing in regard to the very important effects of the duration of labor after bad symptoms or dangerous complications have supervened. It asserts that the duration of labor is in itself (*per se*) only an inconsiderable part (probably a very inconsiderable part) of the many causes of the mortality of women in parturition and childbed.

"Perhaps the strongest evidence in favor of this proposition, is the fact that it is the ancient and generally received opinion of the profession.* It rests upon what may be called the instincts of all experienced accoucheurs. In a science like medicine, where so little is capable of absolute demonstration, the opinions of the great and wise, especially if supported by ancient tradition, are among the most valuable and trustworthy guides of practice.

"But the proposition may be supported most satisfactorily, both by direct and indirect evidence. Were it true that, 'contrary to the general opinion of the obstetric profession, the mere length of the labor is a most serious and important element in reference to the degree of danger and fatality accompanying the process,' then a well established rule of philosophizing must be declared to be at fault. It was a maxim of Newton's, that no more causes are to be admitted than are true and sufficient to explain the effects. Now it will be asserted by scarcely any one, that any obstetric patient dies without a very evident, true, and sufficient cause. The causes of such deaths are very various

* In attempting the defence of the opposite view, Dr. Simpson says: "I am fully aware that when I state my conviction that the mere degree of duration and continuance of a labor is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence, I venture to broach a doctrine which stands up alike against the opinion and practice of some of the highest authorities in the obstetric profession.

"About half a century ago, when treating of the influence of the duration of labor in difficult and instrumental deliveries, Dr. Osborn observed: 'I believe it is confirmed by general observation, that women recover at least as well after long, lingering, and laborious labors, the duration of which may have been extended to several days, as after the easiest, quickest, and most natural delivery.' In making this remark, Dr. Osborn stated, not his own opinion only, but, I believe, the general opinion of the accoucheurs of his time; and the same doctrine, little or not at all modified, still continues to be taught and acted upon, down to the present day, in the great English and Irish schools of midwifery, as the able and excellent writings of (for example) Professor Davis and Murphy, in London, and Drs. Collins and Beatty, in Dublin, &c., fully testify."—(*Provincial Medical and Surgical Journal*, Feb. 9, 1848, p. 57.)

indeed; but the mere length of labor is, by Newton's maxim, excluded from the number, as the truth of it is in question, and it is not required to explain the phenomena.

"Moreover, it is always true in nature that uniformity of cause insures uniformity of effect. This axiom is also at variance with the belief that mere duration of labor is an important cause of fatality from the process. For it is a common observation that after long labors, even after the longest uncomplicated labors, there is often unusually rapid recovery. In the great mass of very long cases there is generally present some distinct and dangerous complication, which obscures the influence of the mere length of the labor, and destroys their value in regard to the observation of the effects of mere protraction. Again, in short and easy labors, where duration as a cause of fatality, supposed by some to be supremely important, is absent, there is still a considerable mortality.

"Dr. Collins has distinguished himself by his zealous defence of the doctrine embodied in our second proposition, maintaining, as he does, that the mortality from protraction of labor, apart from other causes, is comparatively small. His valuable 'Practical Treatise' contains no record of any case dying from the mere length of the labor; and his experience, founded on his wide field of observation, leads him to believe mere protraction of labor an inconsiderable cause of maternal mortality. It would be difficult to adduce statistics, at least from Dr. Collins's work, to prove our second proposition. We have already shown how erroneously statistics framed from the data in his work have been used, and pushed forward as if proving that our second proposition is false. But some of Dr. Collins's data are almost as valuable as if they were positive proofs, from the light which they throw on the real causes of death in protracted cases.

"To take one aspect of Dr. Collins's cases, as he has himself given it: * Of 16,414 parturient women under his care in the Dublin Lying-in Hospital, 42 died, whose labors were longer than twenty hours. 'Of the 42, 3 died of typhus fever; 9 of puerperal fever; 1 of stricture of the intestine, with effusion into the thorax; 3 where the placenta was retained; 2 of convulsions; 1 of abdominal inflammation previous to labor; 9 of rupture of the uterus; 1 of inflammation of the intestines, with pus in the uterine sinuses; 3 of anomalous disease: 1 of diffuse cellular inflammation; 6 of inflammation, &c., subsequent to difficult labor; 1 of ulceration and sloughing of the vagina; 1 of disease of the lungs and hemorrhage; and 1 of abdominal abscess.' Here it is evident that we have a list of causes of death, apart from mere duration of labor, in all the cases where the length of the process exceeded twenty hours. No doubt the mere length of the labor may have been an aggravation in all these cases, but of this there is no evidence whatever in Dr. Collins's data, however arranged; and we must accept the opinion of Dr. Collins, who took care of all the cases, an opinion sanctioned by previous general acceptance for ages, that protraction of labor was an inconsiderable part of the many causes of this maternal mortality in childbed.

"The true bearing upon the great question before us of the statement just quoted from Dr. Collins, has been altogether misconceived in some quarters. Dr. Collins's statement has been represented as 'a list merely of such injuries and diseases as tedious labor does produce;' and it is added, as if it were an apt illustration, that 'long ago surgeons always used to argue, in regard to their lithotomy and other cases, that the deaths were from inflammation of the bladder, or inflammation of the intestines, or disease of the kidneys, or of the liver, or—anything, in fact, but the operation itself. Modern surgery (it is said) does not admit of such pathological casuistry. Nor does modern midwifery.'† It is scarcely worth while to stop to contradict, in the most summary manner, the indiscreet reproach so easily cast upon old surgery and surgeons. Let us submit for a moment, and for argument's sake, to consider it true; and only for a moment, as its irrelevancy will be easily made apparant. These old

* "Provincial Medical and Surgical Journal," Oct. 18, 1848, p. 573.

† *Ibid.*, Nov. 1, 1848, p. 506.

surgeons argued that their patients did not die of lithotomy, or of its consequences. Dr. Collins does not argue that his patients did not die of labor and its consequences; on the contrary, he admits it. Dr. Collins argues in opposition to Dr. Simpson, that the 'mere length' of labor was not a cause of death. To make a just use of the analogy above given, Dr. Simpson should have condemned the old surgeons for not considering the mere duration of the operation of lithotomy as a chief cause of the mortality of the operation. Dr. Simpson wishes us to condemn the old surgeons for not admitting inflammation of the bladder and intestines, &c., as causes of death in connection with lithotomy. In his zeal to prove the importance of mere duration of labor in reference to the fatality of the process, he censures Dr. Collins for admitting exactly analogous diseases as causes of death in connection with labor. Moreover, when Dr. Simpson speaks of 'tedious' labor, he uses a well-known term, implying a great deal more than mere length of labor. When he says that tedious labor produces such diseases as Dr. Collins enumerates, then he and Dr. Collins are at one, and he had no right to address him as if committing a very great error. When he says that tedious labor produces these effects, he is not differing from, but agreeing with, the whole profession; only he is deserting the position which Dr. Collins attacked, and which he would still fain appear to hold. For his statement is not that tedious labor leads to these causes of death—a true one, but 'that the mere degree of duration and continuance of labor is, *per se*, dangerous both to the mother and child, and very often fatal even in its influence;' a doctrine most obviously incorrect.

"The element of mere duration of labor is, in fatal cases, so mixed up with other circumstances that I despair of medical philosophers being ever able so to handle obstetric statistics as to make them yield anything like an approximation to a proper estimate of the baneful influence of mere duration of labor. In protracted cases, with no other evident dangerous complication, it is a common remark that the patients appear to make unusually rapid recoveries.

"In tedious cases it is not the protraction which causes the complications and danger, but the complications which cause the protraction and danger, leaving the mere protraction as a negation destitute of any presiding influence."

ART. 118.—*Labor postponed for sixty-eight days after the Rupture of the Membranes.* By Dr. MONTGOMERY.

(*Dublin Hospital Gazette*, Jan. 15, 1857.)

CASE.—"A lady who had borne two children menstruated, for the last time, on the 22d May, 1850, and then, becoming pregnant, quickened on the 26th September, and went on perfectly well until the 11th November, when, just as she was going to bed, she became conscious that there was a watery discharge from the vagina, which, as the event proved, was the liquor amnii.

"This occurred at her residence, between eighty and ninety miles from Dublin, and caused her great alarm, as she took for granted that her labor must be at hand, and as I had always attended her, she had a great objection to be confined under any other hands. So strong was this feeling that she determined to run the risk of travelling up to town, which she did in a railway carriage, accompanied by a medical man, for fear of the worst.

"She arrived safely in town on the 13th, and took up her abode near me; the discharge, which was generally limpid and colorless, but occasionally rose-colored, continued without intermission; but it was soon observed, contrary to what might be expected, that the flow was greatest when the lady was lying down, and least when she was sitting up, or walking about.

This, which she was the first to observe, puzzled her very much, and she pressed me for an explanation, which I did not feel much difficulty in offering, and I told her that I thought the opening, which I presumed was very small, had in all probability taken place very high up, while the lower part of the membranes remained sound; in which case, when she stood up, the water would sink below the level of the aperture, and so not flow out; but when she

lay horizontal there was nothing to prevent its constant escape. The result justified this supposition.

"Her health continued very good, she drove or walked every day, she continued to increase in size, and the motions of the child were, to the last, active.

"On the 18th January, 1851, labor supervened, and was short, and in every respect most favorable. On my arrival I found a full bag of waters presenting at the os uteri, which was fully dilated, and in about an hour she gave birth to a son, of full size, for eight months, but very white, and he never became rosy, as he ought, after crying strongly, which he did at first; but afterwards he fell into the peculiar incessant wailing low cry, which is always of such evil augury in new-born infants. A wet-nurse was immediately provided, but the child would not suck, nor would it swallow fluids conveyed into its mouth; it gradually grew more feeble and exhausted, and in six hours ceased to exist.

"The placenta was allowed to come away with the least possible assistance, and on floating it in clean water, with its membranes, I found in the latter, within half an inch of the edge of the placenta, a small aperture of about an eighth of an inch in diameter, the edges of which looked as clean cut as if it had been made with a fine punch: this fully explained the peculiarity above alluded to.

"Now, in this case, the daily discharge amounted, on an average, to about five ounces of fluid, and lasted for sixty-eight days, so that there must have come away about 340 ounces, or twenty-one pints, making nearly three gallons; and it seems reasonable to infer that the debility of the child arose from so much of the vital action which should have contributed to its sanguineous support, having been expended in secreting such a quantity of liquor amnii.

"Such a lesion as this is also interesting, as affording a probable explanation of the nature of at least some of those cases, in which abundant serous discharge takes place from the vagina during pregnancy.

"I may mention, as a curious fact connected with this case, that the same accident happened to the lady's mother."

ART. 119.—*On the Employment of Pressure in place of Traction in Delivery.*
By Dr. V. RITGEN.

(*Zeitsch. für Geburtsh.*, Bd. viii., 1857; and *Medical Times and Gazette*, May 23, 1857.)

Dr. V. Ritgen observes, that while natural delivery is effected by the exertion of a pressure which keeps all the parts of the child compactly together, and is most favorable for its passage through the pelvis, and the preservation of its life, when the accoucheur interferes, his procedures consist in the employment of some means for effecting traction, during which the ovoid form of the child becomes disturbed, and its successful delivery rendered more difficult. The object of the present paper is to suggest that on several occasions pressure may be substituted for this traction; but we are of opinion that the practices he suggests are frequently resorted to by accoucheurs, and scarcely called for a formal statement from so eminent a practitioner.

Having observed practitioners who, after separating the limbs or head of a premature infant, while making traction, passed up the hand above the remaining parts, and brought them down in the hollow of the hand, he preferred performing this manœuvre for the entire child, without practising any preliminary traction. He adopts the same practice in the case of putrid children, and when the placenta or large coagula are detained. When there is a vertex presentation, and the external parts are insufficiently dilated, while the pains are so severe as to threaten rupture, he makes pressure in the interval of the pains through the lower part of the rectum; and when the hastening of the passage of the head is a matter of urgency, he passes one or two well-oiled fingers high up into the rectum, directing pressure downwards and forwards. The anus is in these cases very yielding. In his Klinik he is in the habit of exploring pregnant women not only by the vagina, but by the rectum.

For several years past the author has had recourse to pressure, when it has become necessary to expedite foot presentations. He passes his hand along the spine of the child, places the index finger on the shoulder on one side of

the neck, and the middle finger on the other side, and surrounding one arm by the thumb, and the other by the ring and middle fingers, makes pressure downwards; but how this movement is distinguished from traction it is not easy to see. When the child is large, has descended low down, or the parts of the mother resist, the application of the hand along the spine may require some manœuvring; and, other means failing, the child's body should be pushed back as far as the knees, in order to let the hand pass. This seems to us questionable practice; while other directions given by the author for acting by means of pressure upon the head in foot presentations are more ingenious than practicable. However, the author's chief object in the paper is merely to suggest the inquiry, how far the principle of pressure can be advantageously substituted for that of traction.

ART. 120.—*Unexpected Turning by External Manipulation.* By Dr. FAVENUE, of Leschelles.

(*L'Abeille Méd.*, July 5, 1857; *Gaz. Hébdom. de Méd. et Chir.*, July 31, 1857.)

This case is very curious, as showing the value of manipulation through the walls of the abdomen in the process of turning, for if this mode of treatment is effectual under circumstances such as are here described, what may not be expected where the membranes are not ruptured, and where proper promptness is employed.

CASE.—Madame Jamart, of Benzoufolie, æt. 46, tall, strong, well-made, and already the mother of seven children. Dr. Favenue was called in consultation on the night of the 6th of March, 1855, and found that the patient had been in labor for forty-eight hours. He found also the left arm of the child protruding from the vulva, ecchymosed, deprived of epidermis, and limp like that of a dead child. The cord, also, was broken, and evidently great efforts had been made to procure delivery. The child appeared to have been dead for about twenty-four hours.

Under these circumstances, Dr. Favenue attempted to turn in the ordinary way, but the swollen and painful state of the vulva, and the contracted and ever-contracting state of the uterus, rendered the attempts altogether unsuccessful. All this time the patient was greatly exhausted, and the uterine pains were violent and incessant. Perforation seemed to be inevitable, but before having recourse to this severe measure, another attempt was made at turning, and in doing this the unoccupied hand of the operator was pressed upon the hypogastric region over the uterine tumor, when, to Dr. Favenue's great surprise, a movement was felt within the uterus, and the protruded arm receded out of reach. Immediately afterwards, there followed a violent pain, and the lumbar region of the child was forced down into the vulva. This presentation, partly by manipulation with one hand through the walls of the abdomen, and partly by manipulation in the ordinary way, changed to that of the nates, and in the end the child, which was very large, was delivered without any great difficulty. Since this time the mother has been delivered of another child.

ART. 121.—*Case of partial recovery from Ruptured Uterus.* By Dr. HARVEY.

(*Dublin Quarterly Journal of Medical Science*, Aug., 1857.)

The circumstance most worthy of attention in this case is the fact, that though leeching, mercurials by the skin, and fomentations, were employed as auxiliaries, the main treatment consisted in the full administration of opium, so as to keep the patient continually under its influence. The quantity taken was large, fifteen grains in the first twenty-four hours, and fifty grains in all during the first week of her illness, besides a considerable quantity in various forms,—and yet none of the poisonous effects of the drug were manifested. If it had not been for the dogged obstinacy of the woman she would have saved her life, as well as recovered from a ruptured uterus.

CASE.—Mary M., æt. 38, a spare but healthy-looking woman, was admitted into the Lying-in-Hospital, stated to have been in rather strong labor of her third child for the last thirty-six hours; former labors reported to have been

natural, and of about nine hours' duration. When seen at 2 P. M., the pains were strong and frequent, and she felt debilitated. Pulse about 100, weak; bowels confined; no difficulty in passing urine; the head was found occupying the upper part of the cavity of the pelvis; presenting part oedematous, and making slow advance; liquor amnii had been dribbling away since the day before. She was ordered a turpentine enema and some broth. On being suddenly summoned, about half-past seven o'clock in the evening, we found the woman in a state of great prostration; the pains had ceased, and the pulse was exceedingly rapid and weak; the head of the child had receded out of the reach of the fingers, a large globular tumor was felt in the epigastrium, and there was also some abdominal tenderness. She was not conscious of any sudden change of movement having taken place. It appeared that she had a severe fall, with a basket of bread on her back, some weeks before.

On consultation with Drs. Finn and Tanner it was determined to attempt delivery by turning. This was easily accomplished, all being loose in the cavity of the uterus, the foetus still remaining partially within it, its head lying in a lax pouch over the os pubis. There being some difficulty in extracting the head, it was perforated behind the ear, and delivery thus accomplished. The placenta followed readily, and there was little hemorrhage throughout. It was considered advisable that I should re-introduce my hand, with a view to free any intestine that might have got engaged in the wound, when I discovered a large oblique rent in the right side of the fundus, situated anteriorly, at least three inches in extent; my fingers passed freely into the peritoneal cavity.

The patient was very much exhausted after the operation. The pulse was then 124, small and weak; surface perspiring, but not cold. There was none of the brown vomiting frequently observed in such cases. A moderately tight bandage was applied, and she was ordered to take two grains of opium immediately, and one grain every hour afterwards; to have arrow-root and weak tea.

We desired that we should be sent for if she were alive at 7 o'clock in the morning.

Second day, 8 o'clock A. M.—A quiet night, but had little sleep; countenance not much sunken; abdominal tenderness rather increased; pulse 100, soft; tongue moist; has passed water. Powders regularly taken up to six o'clock.

2 o'clock P. M.—Has been dozing a good deal; tympanitis and rather more tenderness; pulse 104, soft, but rather fuller: respirations 18; refers all her uneasiness to the epigastrium. Twenty leeches to the abdomen, to be followed by fomentations, and afterwards a large poultice. Powders continued.

8½ o'clock P. M.—Has continued to slumber occasionally, but is easily aroused, and perfectly collected; considerable relief from the leeching; tympanitic distension rather increased; countenance better. Has taken a good deal of arrow-root. No vomiting; urine freely passed. No powders have been taken since three o'clock, owing to a mistake. She is to take one grain of opium every second hour, and half a drachm of mercurial ointment is to be rubbed into the arms every eighth hour.

Third day, 8 o'clock A. M.—Slept a good deal; some vomiting of grass-green fluid this morning; lochia natural; pulse 108, soft. The powders to be continued every fourth hour; cataplasms and mercurial ointment to be continued.

9 o'clock P. M.—Occasional vomiting still; tympanitis and tenderness rather diminished; lies on both sides sometimes; urine free.

Fourth day, 11 o'clock A. M.—Some sleep, but countenance a good deal sunk this morning, with dampness and diminished warmth of skin; pulse 120, weaker; was allowed to indulge too freely in drinks, and has vomited considerably more in consequence. A blister to be applied to the abdomen, and if the vomiting continue in the evening, an injection of broth, with half a drachm of tincture of opium, to be administered; to take a dessert-spoonful of chicken broth every half hour.

9 o'clock P. M.—Vomiting has ceased, tenderness and tympanitis perceptibly diminished; countenance improved; pulse 116, stronger; lochia have disappeared; dislikes her powders. To have the following pills: Opium twelve grains; extract of hemlock, a scruple; to be divided into twelve pills; one to

be taken every third hour; the cataplasms and mercurial ointment to be continued: and to have an increased quantity of broth.

Fifth day, 11 o'clock A. M.—Night restless, and yet her countenance is improved; no appearance of mercurial action; blistered surface dressed with a drachm of mercurial ointment; frictions discontinued; pills to be continued.

9 o'clock P. M.—Puffing and tenderness less than at any time during her illness; complains slightly of her mouth; continue treatment.

Sixth day.—Three full, free, feculent evacuations; pulse 100, rather weak; tympanitis nearly gone; broth given more freely; biscuit with milk; the pills continued.

Seventh day.—Bowels free; tongue clean; little tenderness, except in the neighborhood of the rent; pills to be omitted, and the following draught to be taken at night: Battley's sedative liquor of opium, twenty minims; camphor mixture, eleven drachms; syrup of orange, a drachm. Mix.

Eighth day.—Slept well; no pain; tenderness nearly gone. Is tired of broth, tea, and biscuit; an egg beaten up with a dessert-spoonful of wine, as often as four times in the twenty-four hours.

Twelfth day.—Has continued to improve, with slight variations, during the last four days; debility now appears to be the only source of complaint. Has continued her draughts of Battley's solution, and her wine. The following pill to be taken every fourth hour: Sulphate of quina, two grains; extract of gentian, two grains and a half. Mix.

Evening.—Pressing hard to be allowed to go home, and feigning inability to speak except when she wants to urge her point; bowels rather freer. Pills to be continued, and an opiate enema to be administered at night.

Thirteenth day.—Has obstinately refused her wine and pills since six o'clock last evening, and would not submit to the enema, notwithstanding which she has had a pretty good night; tongue natural; pulse 95, of fair strength. Discontented and difficult to manage all through her illness, she now resolutely refuses all nourishment and medicine, though told her recovery will as certainly follow compliance, as death must the contrary.

9 o'clock P. M.—In the afternoon, about half-past three o'clock, was induced by the priest to take some broth and a pill; she is, notwithstanding, evidently sinking to-night; the extremities are cold, and the pulse can scarcely be felt; she is perfectly collected, and keeps to her resolution.

Fourteenth day.—Died about four o'clock this morning.

Examination, sixteen hours after death.—A very hurried and unsatisfactory examination was, with great difficulty, obtained by candlelight, in the presence of her father and mother. There was no distension of the abdomen; intestines in the neighborhood of uterus were extensively agglutinated to it, to each other, and to the abdominal parietes, by lymph in process of organization; a few small sacculi, formed by lymph inclosing spots of half an inch to an inch in diameter, where the intestines did not touch the parietes, contained purulent matter, but the quantity, in all, was by no means great; uterus about two inches and a half or three inches in diameter, adhering, on all sides, more or less to the neighboring viscera; the rent, occupying right side of fundus, appeared to have closed throughout the whole of its length within, and through about two-thirds of the substance of the uterus from within outwards; externally it had the appearance of a granulating, incised wound, which had not been evenly closed in the first instance, pouting a little towards the peritoneal surface; its length now appeared about an inch, or perhaps a little more, say two-fifths, of the diameter of the uterus.

It was, of course, impossible to procure the specimen for preservation.

ART. 122.—*A new symptom of Rupture of the Uterus.* By Dr. M'CLINTOCK.

(*Dublin Quarterly Journal of Medical Science*, Nov., 1857.)

At a recent meeting of the Dublin Obstetrical Society, Dr. M'Clintock related some cases of rupture of the uterus and of the vagina, to illustrate the obscurity which may occasionally surround the diagnosis of this accident when occurring during parturition. He particularly drew attention to a symptom observed in

one of the cases, which he considered might hereafter be found of value as a diagnostic of laceration of the uterus or vagina. This symptom was an *emphysematous state of the integuments covering the hypogastrium*. Its existence was detected by the stethoscope while searching for the foetal heart. Examined for in this manner, the crepitation was loud and distinct, but to the hand it was not so obvious, except when firm pressure was made in the proper situation, then the crepitus was evident, and was recognized by Dr. G. Montgomery, and by several pupils who happened to be present at the case. The other symptoms present were of so ambiguous a kind that the possibility of rupture having taken place seemed doubtful. There was no prostration, no recession of the presenting part, and no cessation of the pains; the woman was able to be up and to walk about. Having ascertained that the emphysema had not extended downwards from the chest or neck, and that it was confined to the supra-pubic and iliac regions, Dr. M'Clintock inferred that the air had obtained an entrance through some rent in the genital passages. Acting upon this conclusion, the woman was delivered by craniotomy (the foetal heart had not been heard for two hours previously). She sank rapidly after delivery, and died in a few hours. The left broad ligament was found emphysematous, and a tear existed in the left side of the uterus at the junction of the body and cervix. At some distance from this the peritoneum was found rent also, and a considerable quantity of blood had been effused into the abdominal cavity.

ART. 123.—*Gastrotomy by means of Caustics*. By M. MARTIN, of Pont-de-Beauvoisin.

(*Gazette des Hôpitaux*, 138, 1856; and *Schmidt's Jahrb.*, Bd. lcv. No. 4, 1857.)

CASE.—X. Y—, æt. 36, became pregnant for the second time towards the end of October, 1855. Her first pregnancy was fifteen years ago, when she gave birth, without any difficulty, to a healthy girl. On the 31st December, she was seized with colic-like pains in the region of the uterus, and again a little while afterwards; and after the second attack, a small tumor was found in the lower part of the abdomen, on the left side. Both these attacks were accompanied by inflammatory excitement. After this she menstruated regularly every month. At the beginning of August, and again on the 8th, about the natural term of pregnancy, the pangs of labor made their appearance, but in a somewhat irregular manner. At this time, extra-uterine pregnancy was detected. The os uteri was distensible, easily admitting the tips of three fingers; the uterus itself was empty, with the exception of some sanguinolent fluid which followed the withdrawal of the fingers, flattened, and pressed back into the right iliac fossa, where it formed a small tumor. A still larger tumor occupied the left side, extending upwards to the level of the false ribs, where, on examining carefully, a child's head could be detected. The mother said she had felt the movements of the child on the previous evening, but not during the day on which M. Martin examined her. M. Martin, moreover, was equally unable to provoke these movements, or to hear the beating of the foetal heart.

Fearing by delaying longer to risk the rupture of the cyst containing the child, M. Martin decided upon performing the operation of gastrotomy by caustic, thinking that this mode of operating might be more successful than that in which the knife was employed. The cyst was opened after five applications of the caustic, and without the loss of a single drop of blood. Caustic potass was resorted to in the first place, and applied twice; the Canquoin paste was used in the remaining three instances. In each case the old eschar was detached before reapplying the caustic. The line of application was parallel to the *linea alba*, a little distance from it on the left side, and to an extent of about fifty centimetres in length. The child was already dead. On attempts to extract it, some difficulty was experienced, and it was necessary to dismember it before delivery could be effected. After the operation the patient appears to have remained for some time in a state of collapse, but eventually she rallied. The wound was dressed with compresses soaked in vinegar, and these were not disturbed for three days. After this time, the dressings

were renewed every day, and, as the case progressed, astringent injections (their nature is not specified) were associated with them. In three weeks the wound was nearly healed, and the patient was able to walk about the garden.

ART. 124.—*Cases of Sudden Death after Parturition, with air in the veins.* By Mr. MAY, JR., Surgeon to the Royal Berkshire Hospital.

(*British Med. Journal*, June 6, 1857.)

Mr. May is of opinion, and his opinion has much to recommend it, that the entrance of air through the uterine veins was the cause of death in these cases. In a word, he is of opinion that these cases present an analogy with those in which air enters the veins during operations and experiments. In all these eleven cases death was more or less sudden, and always inexplicable by the post-mortem appearance; and the gas could not have been developed by putrefaction, seeing that most of the bodies were warm when examined.

"That death may result from the entrance of air into the veins during surgical operations, has long been known to the profession; but that it might be a cause of danger after parturition (as suggested by Legallois, in 1829) did not obtain the notice it deserved, until Dr. Cormack read a paper on the subject before the Westminster Medical Society, in 1850. I propose to allude briefly to the cases narrated by Dr. Cormack, and then to give the details of three that have occurred in this neighborhood.

"In 1841, Dr. Bessems attended a labor, in which there was hemorrhage, with retention of placenta. On the fourth day after her confinement, whilst an injection was being thrown into the uterus, she suddenly exclaimed that she was suffocated, and died in three minutes. Air was found in the heart and veins.

"M. Lionet, of Corbeil, attended a lady, aged 27. She was much frightened during the last month of her pregnancy, and did not completely recover her strength; but her labor was natural, and not attended with hemorrhage. She soon, however, became faint, breathed with difficulty, and expired five hours after delivery. Air was found in the heart and in the cerebral veins.

"Dr. Wintrich, in 1848, published a case of rapid death after parturition. Convulsive movements and suffocation followed the expulsion of the infant, and partial separation of the placenta. Air was found in the venous system.

"Professor Simpson mentions a case in which death occurred a few hours after a delivery, accompanied with hemorrhage and alternate contractions and relaxations of the uterus. Air was found to have entered through the uterine veins.

"Dr. Lever mentions three cases; in all of them there was hemorrhage, and death a few hours after labor. Air was found in the uterine and other veins.

"In 1850, Mr. Berry, of Birmingham, attended a primipara, aged 22. There was little hemorrhage, and she appeared to be going on well for six hours; she then became affected with difficulty of breathing and faintness, and expired in less than an hour. Air was found in the heart. The uterine veins were patulous.

"CASE 1.—The case of which an abstract is here given, was read before the Reading Pathological Society, by Mr. Taylor, of Wargrave.

"In September, 1841, Mrs. —, æt. 30, was taken in labor with her third child. The labor progressed naturally; but no urine having been passed, Mr. Taylor was in the act of introducing a catheter, when a severe pain occurred. The liquor amnii was discharged to the amount of three-fourths of a pint. The woman suddenly exclaimed, 'Oh! how faint I feel,' was convulsed for a moment, and expired. By the last pain the head had been forced partly from the outlet. An attempt was made to remove the child without success.

"A post-mortem examination was made forty-eight hours after death. The uterus extended above the umbilicus. The placenta occupied the anterior surface from pubis to umbilicus; no portion was separated. A few days before her labor she had a copious discharge of blood. There was little blood in the uterus. The bladder was empty. The lower vena cava was empty. The heart was healthy. The right auricle was thin, almost transparent, and dis-

tended with air. Hardly a trace of blood existed in the heart. The brain and membranes were healthy. In the spine, between the theca and the cord, there was considerable effusion of fluid blood, but none within the sheath.

"CASE 2.—I am indebted to Mr. Smith, of Whitchurch, for the details of the following case.

"Mrs. T—, between 38 and 40 years of age, was confined of her sixth child, a male, on the morning of May 7th, 1852, about 8 A. M., and her attendant left her shortly afterwards, as he said, very comfortable. As, however, she had severe after-pains, an opiate was sent her. Mr. Smith was summoned to her about 2 P. M.; and on his arrival, he found she had just died. She complained of excessively severe after-pains, together with great oppression about the chest, and feelings of sinking and exhaustion and extreme restlessness. In answer to inquiries as to whether there had been any hemorrhage, the attendants stated that there had not.

"A post-mortem examination was performed the same evening, the body not being quite cold. The abdominal viscera were all free from disease. On opening the uterus, which was large, there was found a considerable quantity of coagulated blood; but not by any means enough to satisfy one that loss of blood was the cause of death. The uterus contained also a considerable piece of the placenta adhering to its internal surface. In the chest were old adhesions between the pleura costalis and pulmonalis. The heart appeared distended; not that it was enlarged, properly so called, but that it had an appearance of distension, which was evidently on the right side of the organ. On opening the right auricle, a quantity of air escaped with a sort of little puff, and the organ was at once reduced to its proper dimensions. No disease was found in its substance or valves. The left ventricle contained a small clot.

"CASE 3.—In the autumn of 1855, Mrs. E—, æt. 28, was delivered of her third child, after a natural labor. She had become sufficiently convalescent to resume her household duties; but on the eighth day she was taken suddenly ill, and expired before Mr. Walford arrived.

"I assisted at the post-mortem examination the following day. No unusual appearance was observed until the liver was sliced; it was then noticed that frothy blood escaped, and, a further examination being made, air was discovered in the vena cava inferior and vena portæ; and the right side of the heart was distended with frothy blood. The uterus was of its usual size for the eighth day. There was no sign of decomposition about the body."

ART. 125.—*Statistics of Placenta Prævia.* By Dr. SCHWARZ.

(*Monatsch. für Geburtskunde*, Bd. viii. 1857.)

Dr. Schwarz, of Fulda, in Hesse-Cassel, having heard the frequency of placenta prævia stated in a medical society as far greater than he had hitherto believed it to be, examined in reference to this point the official returns made by the Hesse practitioners. These were supplied by 150 accoucheurs, during a period of twenty years, i. e., from 1835 to 1854 inclusive. They related to 519,328 births, and among these were only 332 cases of placenta prævia—the numbers varying from 8 to 28 per annum. Of these 332 cases, 246 women recovered and 86 died; 251 children were born dead, and 85 were born living. In 40 instances the women were primiparous and in 292 pluriparous. Podalic version was performed in 259 cases, and cephalic version in 7; while in 23 instances the children were removed by the forceps, in 6 by craniotomy, and in 13 by post-mortem Cæsarian section. In 8 instances the placenta was removed, and in 16 the plug was resorted to.

ART. 126.—*Statistics of Coiling of the Funis.* By Dr. WEIDEMANN.

(*Monatsch. für Geburtskunde*, Bd. viii.; and *Medical Times and Gaz.*, July, 1857.)

Dr. Weidemann states that among 28,430 deliveries the funis has been found coiled around the child in 3379 instances. In 3230 of these it was coiled around the neck, and in 149 around other parts of the body. Of the 3230 cases, 2546 consisted in a simple coil, and in 684 there were several coils. In relation to the causes of this occurrence, it is interesting to notice that of 1788

cases occurring at the Marburg Midwifery Institution, the funis was in 80 (1: 22.2) under 15 inches, and in 183 above 25 inches (1: 9.71) in length; that in 54 (1: 33) there was very little liquor amnii, and in 41 (1: 43.6) there was very much; in 165 (1: 10.8) the child was under 5 pounds weight, and in 28 (1: 61.7) it was above 8 pounds. Therefore, among the favoring causes of the occurrence may be mentioned a long funis, abundance of liquor amnii, and a small child.

Among 2930 infants born at Marburg, 182 (1: 16.09) were dead, and 251 (1: 12.41) were still-born. Of 725 born with coiled funis, 45 (1: 16.11) were dead, and 72 (1: 10.06) were still-born. Of the 45 dead-born, in 18 only could the death be referred to this alone, *i. e.*, only 1: 40.2 in the 725 examples of coiling. From an examination of the figures derived from the midwifery institutions at Dresden, Göttingen, Würzburg, Berlin, and Marburg, it results that of 13,720 new-born infants, 902 (1: 15.21) were born dead; while in the 1217 instances of coiling of the funis, 31 children were born dead, whose death could be attributed to that circumstance, giving a proportion of 1: 39 to the coilings, and 1: 19 to the number born dead.

Thus, as (1) the 16th child among new-born children in general, as well as among those in which coiling has taken place, is born dead; as (2) the 12th child among the new-born in general, and the 10th among those around whom the funis is coiled is born still-born; and as (3) in 1 child in 40 only can this coiling be regarded as really the cause of death, it is evident that this accident does not occupy a very prominent place.

ART. 127.—*Fracture of the Sternum occurring during Labor.*

By Drs. LUCCHETTI and POSTA.

(*Bull. delle Scienze Med. di Bologna*, April, 1857; and *Dublin Quarterly Journal of Med. Science*, Nov., 1857.)

CASE.—Signora Maria Grossi, of Roccagulienna, in the district of Gaeta, æt. 25, of a sanguineo-nervous temperament, well formed both as to the pelvis and her person generally, having arrived at the full term of her first pregnancy, began, on the morning of the first day of the present year, 1857, to feel the pains of labor, which increased gradually in frequency and intensity, until at three o'clock in the afternoon the period of expulsion had arrived. The patient uniting her voluntary efforts to the spontaneous and natural contractions of the uterus and of the abdominal muscles suddenly perceived a crash and intense pain in the antero-superior region of the chest, and in a few moments gave birth to a living female child.

The expulsion of the placenta was easy, and unattended with inconvenience; however, after the labor the pain in the same region increased so much that the patient's relatives were obliged to apply for medical aid.

Although fracture of the sternum is most easily diagnosed, manifesting itself, in addition to the phenomena of disturbed respiration, by signs evident to the touch, the eye, and the ear, the accident was considered to be one of simple muscular strain, was neglected for a week, and the patient was not subjected to treatment.

The symptoms of the thoracic lesion becoming threatening, Dr. Luchetti was called in, who, arriving on the evening of the seventh day after delivery, found the patient sitting up in bed, unable to lie down either on her side or back, nor could she, without suffering, raise her arms; her face was turgid and almost livid, her tongue was red, and somewhat loaded. There was very high fever; the pulse was hard, full, frequent, and occasionally dicrotous; there was urgent thirst; the bowels were constipated; the secretion of milk was regular. Respiration was difficult and unequal, and was attended with so much pain, and such a sense of weight and oppression, as to lead to the apprehension that suffocation was imminent. The patient was tormented with a troublesome and frequent cough, every return of which renewed the sense of crashing and the intense pain in the chest, a little yellowish mucus being with difficulty expectorated. The sweat of agony appeared at uncertain intervals upon the forehead and neck, but the skin of the rest of the body was unusually dry. The

seat of pain, which was precisely the middle of the upper part of the sternum, presented an elevation caused by the fracture of that part of the bone, the superior broken portion projecting, while the inferior was depressed. The shocks of the cough moved the bony fragments, and the crepitation, which is the surest indication of fracture, was audible to the bystanders; hence it was evident that the sternum had been fractured transversely in its upper part.

In the evening an emulsion of gum arabic with syrup of digitalis was prescribed, and several leeches were applied to the affected part. These means were attended with slight and transient relief; but great advantage was obtained during the night by a copious bleeding from the arm, as, in consequence of the diminution of the cough, and the moderation of the more troublesome symptoms produced thereby, the patient was able to enjoy a few hours' sleep.

The following day surgeon Posta being called in for consultation, also recognized the fracture, which had not yet been reduced; this was now done with the assistance of Dr. Luchetti and a young student in medicine, Andrea Winckler, after which a suitable bandage was applied, &c.

At the end of thirty-five days we found Signora Grossi cured, a slight elevation alone remaining at the seat of fracture, produced by a strong and consolidated callus: she is now able to attend to her domestic duties.

ART. 128.—*The excitation of Fœtal movements by cold.*

By Dr. SINCLAIR.

(*Dublin Quarterly Journal of Med. Science*, Nov., 1857.)

The following remarks are from the "Report of the Dublin Obstetrical Society:—"

"Professor Simpson and Dr. Tyler Smith have done a great deal lately towards depriving us of one of the most useful signs of pregnancy. Both deny that the cold hand applied to the abdominal walls of the mother has any power in producing movements in the fœtus.

"Professor Simpson says*—'It is very generally believed by accoucheurs that the sudden application of a cold hand, or other similar body, to the cutaneous surface of the abdomen of a woman advanced in utero-gestation, is capable of exciting movements on the part of the fœtus; and such application has been often recommended as one of the simplest and best means of ascertaining, in doubtful cases of pregnancy, both the existence and vitality of the child.† But as there is no direct organic communication between the abdominal walls of the mother and the body of the fœtus, or between the nervous system of the mother and that of the child in utero, the power of exciting muscular movements in the latter by a sudden impression of cold upon any part of the abdominal maternal skin, seems, physiologically considered, an impossibility; and clinical observation and direct experiment seem to me to prove the whole idea to be fallacious.'

"I hope before the conclusion of this paper to show that it is not impossible to account, physiologically, for the muscular movements of the fœtus which follow the application of cold to the abdominal maternal skin. Before proceeding to this, however, let us examine Dr. Tyler Smith's opinion. He says:‡ 'A very common plan is to place the cold hand, or the hand just taken out of cold water, upon the abdomen, with a view to excite the movements of the fœtus, for the purpose of diagnosis in suspected pregnancy. It is imagined that the fœtus is affected by the temperature of the external hand. When we consider, however, that the integuments and abdominal muscles, the uterus, membranes, and the liquor amnii, all intervene betwixt the cold hand and the fœtus, it is rather too much to suppose that any direct thermometric influence can be exerted on the embryo by such means. A reflex contraction of the uterus itself, from the application of cold to the abdomen, is readily compre-

* "Obstetric Works," vol. ii. p. 142.

† See, for example, "Montgomery's Exposition," &c., p. 89, &c.

‡ "On Parturition and Obstetrics," p. 99.

hended; and no sound physiologist would think of giving any other solution to such movements, if the experiments were performed either during or soon after parturition. Why, then, accept such a different explanation of the movements of pregnancy?"

"I hope I shall not be considered an unsound physiologist if I now proceed to ask you to accept a different explanation.

"That foetal movements may be produced by cold applied to the walls of the abdomen has been empirically acknowledged as true for a long period. The time has now come when it must be substantiated by science, or fall.

"The foetal movements are produced by pressure.

"1st. The sources of pressure are—

"a. The hand of the operator.

"b. The muscles of respiration.

"c. The uterus.

"*Pressure from the hand.*—The degree of pressure will vary with every experimentalist, some having light, others heavy hands. In cases where the walls of the abdomen are very fat, the pressure required to distinguish the uterus will be greater. The effect of the hand has hitherto, however, been insignificant when compared with the other two sources of pressure, as cold alone has been considered the chief agent in producing the motion of the foetus. The pressure of the hand is much lessened by having to pass through the walls of the abdomen, the parietes of the uterus, and the liquor amnii. Notwithstanding this, Professor Simpson considers, when foetal movements do occur, that the pressure of the hand upon the foetus is their only cause.

"*Pressure from the muscles of respiration.*—When the hand, dipped in water of a low temperature, is applied to the abdomen suddenly and unexpectedly, the sensation of cold produces a violent act of inspiration, which is thoracic in its character; for, instead of the abdominal muscles relaxing, as is usually the case when the diaphragm descends, they contract, and consequently the contents of the abdomen are firmly compressed. Cases are on record in which, from the violent contraction of the abdominal muscles, the viscera have been ruptured. It is easy, therefore, to see that the pressure upon the uterus, obtained by causing the diaphragm to descend, and the abdominal muscles to contract, may be very considerable, and it is also evident that the pressure thus caused must act more completely than that which is obtained by the hand alone. The next source of pressure is from *the uterus* itself. It is generally acknowledged that cold applied to the abdomen produces a reflex contraction of the uterus. Acting upon this principle, cold is used for the purpose of arresting 'flooding.' And cold water, injected into the vagina, is sometimes employed to bring on premature labor. Besides this, the sudden application of cold produces an emotion of surprise; and it is well known that emotions sometimes react so powerfully upon the uterus as to cause abortion. It may be stated as a fact, then, that the uterus contracts and exerts a pressure upon its contents when cold is applied to the abdomen.

"I have only now to point out how the pressure of the hand, the pressure of the muscles of respiration, and the pressure of the uterus, produce the foetal movements.

"2d. Pressure produces foetal movements—

"a. By causing excito-motory actions in the foetus.

"b. By impeding the circulation in the foetus.

"*Excito-motory actions in the foetus.*—Professor Simpson has pointed out that the parts of the foetus which lie in contact with the uterine walls, and are consequently the most liable to be irritated, viz., the sides, knees, and feet, are also the parts most susceptible to the excito-motory stimulus.* This curious fact is the key to most of the foetal movements. If the hand, abdominal muscles, or uterus, press in an unusual manner upon any part of the foetus, a reflex motor action will be produced tending to remove that pressure. This, then, is one of the ways in which the wet hand applied to the abdomen produces foetal movements. The next, though less evident, has, I believe, considerable effect

* "Obstetric Works," vol. ii. p. 116.

in their production, viz., *by impeding the circulation in the fœtus*. The circulation in the fœtus is impeded by the pressure upon, and the contraction of, the uterus, which, combined, not only partially close the utero-placental vessels and prevent the proper oxygenation of the blood, but also compress the placental mass and umbilical cord so as to obstruct its normal current. These two causes produce in the fœtus a partial and temporary state of asphyxia, in which condition Dr. Marshall Hall has shown that the reflex nervous system is more easily excited. This condition, therefore, favors the production of excitomotor actions in the fœtus when pressed upon from without. And, besides this, convulsive movements take place in the fœtus when in a state of asphyxia, which, when added to those whose origin is external or reflex, help materially to prove the existence of a living fœtus in the uterus.

"In conclusion, I would say that my intention has not been to overrate the value of the 'cold hand' test, but rather to prevent its falling into entire disuse. It must always be remembered that motions which sometimes take place in the stomach, bowels, abdominal walls, and uterus, may be mistaken for the movements of the fœtus; a little skill, however, will generally enable the operator to distinguish which are the true and which are the spurious."

(B) CONCERNING DISEASES OF WOMEN.

ART. 129.—*Case of Retention of the Menses relieved by puncture through the rectum.* By Dr. OLDHAM, Physician-Accoucheur to Guy's Hospital.

(Guy's Hospital Reports, Third Series, vol. iii. 1857.)

The two following cases are instances of retention of the menses within the cavity of the uterus, which were relieved by puncture through the rectum; the first case being the result of congenital absence of the vagina; the second, the closure of the vagina after labor, by adhesion to its walls, and cicatrization.

CASE 1.—*Congenital absence of vagina; menses retained in the cavity of the uterus; relief by puncture through the rectum.*—Susan W—, æt. 23, was admitted under my care at Guy's Hospital in March, 1850. She was a young person of slender form but womanly development, who had never menstruated. When she came into the hospital her health was feeble, which she ascribed to a severe illness which followed a surgical operation to open a passage to the uterus from the vulva, which had been unsuccessfully attempted, and from which she had not recovered.

She had lived at home in the Isle of Sheppey, and between 16 and 17 years of age the general marks of puberty were manifested, but the permanent absence of menstruation and general delicacy of health had induced her to apply for medical advice both at home and at the hospitals in London, and a malformation of the genital organs had been discovered.

When she was in bed, and the usual examination of the sexual organs was made with the index finger, it passed without difficulty into a passage, at the top of which was a globular, firm swelling, like a distended uterus, but neither cervix nor os uteri could be felt. This canal, however, which thus examined I had taken for the vagina, I subsequently discovered to be the urethra, the orifice of which was remarkably wide, and three-quarters of an inch in length, and the canal itself distensible without effort and without pain, and yet it retained such perfect tonicity that she had always been able to hold her water the usual time. My suspicions were first excited by noticing a discharge of fluid follow the removal of the finger, which had a faint smell of urine, and on inspecting the organs I found that the site of the ostium vaginæ was occupied by this lengthened aperture of the urethra, and that between it and the fourchette there was scarcely any space, and not a trace of vaginal opening. The external organs were normal in their formation, but the most careful exploration of the intermediate space between the urethra and the rectum—(which could in this instance be made with a finger in each canal)—failed to detect any trace of the vagina, and there was no doubt in my mind of its congenital absence. Rising above the pubes, and occupying a central position, was a

globular swelling about the size of a cocoa-nut, which in the course of several months that I observed it, was found to be more defined and hard at one time than another; but generally it was not painful when gathered in the hand, or when pressed with the fingers. This swelling was the uterus distended by menstrual fluid, and a finger in the rectum could detect a central indentation in a firm and rather large cervix, which marked the os uteri. By moving this tumor above, the part below moved correspondingly, and the result of several investigations was the conviction that the uterus distended with menstrual fluid lay in the same direction as the pregnant uterus between the fourth and fifth month, with the os and cervix directed towards the rectum and accessible from it; that the walls of the rectum and urethra were in close approximation, and that the absence of any portion of a vaginal canal below the uterus had compelled the cavity of the body of the uterus to yield to the accumulating menstrual fluid and to inclose it.

The symptoms which had attended this accumulation were not marked by any great regularity of periodical menstrual suffering. The intervals of quiescence have been sometimes protracted to five months, and sometimes indications of menstrual action, such as lumbar, abdominal, and pelvic pain, abdominal fulness, with nausea, or even vomiting, lasting for two or three days, would appear at intervals of five, six, or eight weeks; but during the time she was in the hospital, and before it, regular monthly action was not clearly made out. Her general health had been indifferent, with a tendency to chlorosis, and no doubt the absence of menstrual effort really marked intervals of amenorrhoea. Occasionally the local sufferings were very severe; distinct paroxysms of uterine pain, causing the greatest distress, and attended with constant vomiting, and lasting for three or four days, leaving her much exhausted. For the first three months after her admission into Guy's, the local pains had not been severe; but as her health improved, she had been seized with more marked paroxysms of uterine suffering, during which the uterus contracted rhythmically, and she really underwent all the sufferings of a resisted menstrual labor, for the subjugation of which she took morphia rather freely.

August 14th, 1850.—It was in an attack of this kind of unusual severity, which had lasted four days, during which her sufferings were extreme, and that, too, in spite of large and repeated doses of opium, that I resolved to penetrate the os uteri through the rectum, and so give exit to the menstrual discharge. For this purpose I introduced a curved trocar and canula, with which surgeons puncture the male bladder, through the rectum to the os uteri, and a quantity of treacly-looking blood immediately followed. The operation was painless, but the instrument was not long enough for the purpose, and on withdrawing the trocar, the canula came out from the uterus. Still, the puncture which had been made allowed the menstrual fluid to escape slowly, and its evacuation was attended with great relief, and she passed a comfortable night. Early the following morning a quantity, estimated at ten ounces, of the same fluid was discharged, with some faeces, and again the third day, after which it ceased. The uterine tumor was perceptibly diminished in size, but still to be felt above the pubes, though no longer painful. No bad symptoms followed the operation, and she went home in a week, with an injunction to return to the hospital on the recurrence of menstrual suffering.

On the 19th of September she was seized with the same severe pains, during which the uterus could be felt to contract in paroxysms, with incessant vomitings and great distress. The opening which had been made with the trocar had closed, but the os uteri felt more open, so that the finger, carrying the rectum before it, could be made to enter it, and during the severity of a pain, it was obviously stretched by the fluid being pressed into it. On this occasion I guarded the lower part of a sharp-pointed bistoury with lint wrapped round it, leaving about an inch from the point free, and flattening this against the forefinger of the left hand, I introduced it into the os uteri, cutting an aperture of about half an inch. A quantity of menstrual fluid was at once released, with immediate relief to her suffering; and altogether, on this and the following day, about a pint of the collected menses escaped, with a marked reduction in the size of the uterine tumor, which still remained, however, above the

pelvis. No pain or distress accompanied or followed this operation, and no attempt was made to keep the aperture open. Warm water enemata were alone employed.

On two other occasions I performed the same operation, making in all four, with the same ease, the same relief, and the same freedom from subsequent inflammation. Her general health improved speedily. After the fourth operation, the opening remained patent, although no means had been employed for the purpose, and for the future she menstruated through the rectum without pain or inconvenience, and with considerable regularity. She continued to reside at home for some time, and then went to America with her parents. She was cautioned by me never to marry.

A report from her in June, 1851, states:—

"I am pleased to relate that, on the 8th of May, I was taken unwell, and have been so twice regular to the month. I suffered but little pain. I should say, as near as I can judge, the first time there was a pint and a half passed, and the second time about half a pint. My general health seems very well."

I examined the abdomen in July, and found the uterine swelling much reduced. The opening through the rectum could be felt by the finger, but I abstained from probing it.

The last report I have received of this patient is from Cooperstown, January 13th, 1852, in which she says, writing to a relative:—

"I am happy to tell you, in myself, that I have found no difficulty in wanting any relief. I still continue with the same relief."

CASE 2.—Closure of the vagina by strong adhesion and cicatrization; menses retained in the cavity of the uterus; puncture per rectum.—A married woman, æt. 36, was admitted under my care into Guy's, May 21st, 1851. She had had three children and several abortions. She had not menstruated for five months, and her medical man had discovered that the vagina was closed, and he requested me to admit her into the hospital. The account which she gave was, that her last child was born four years before, with instruments, and that she had menstruated regularly until January, 1851, when it had ceased, and since then she had been subject about every month to aggravated pains in the loins and abdomen, and that sexual coitus could not be accomplished. No coherent or satisfactory history could be obtained.

I found, on examination, that the vaginal canal was obliterated from about three-quarters of an inch of its orifice, by a firm union of its walls with a good deal of cicatrix tissue; and that this union was so consolidated, as to resist the firmest pressure of the finger, and no break or aperture could be discovered. By rectum the os uteri could be detected pointing backwards towards the bowel; it was closed, and there was no swelling below it. Above the brim of the pelvis the body of the uterus could be felt, clearly defined; which, on being pressed downwards, imparted a movement simultaneously to the os as felt per rectum. The uterus reached six inches above the pubes, and was more vertically directed than in the gravid state, and the intestines were before it, so that abdominal palpation produced a tympanitic sound. The mammae were shrunk. The diagnosis formed in this case was, that the uterus was distended with menstrual fluid, which could not escape on account of the closure by adhesion and cicatrization of the upper three-fourths of the vagina.

At first I hoped in this case to be able to find some small opening, which, on being enlarged, might restore a channel per vaginam for the exit of the menses; but, after repeated investigations, I found no trace of such an aperture; and the prospect of dividing the adherent walls with a knife, however carefully conducted, was too hazardous, from the danger to the contiguous viscera, to be encountered. Under these circumstances I resolved to puncture the uterus per rectum, and this was done with a sharp-pointed bistoury without difficulty. A quantity of the peculiar dark treacly kind of retained menses at once escaped; and I passed the tip of my finger into the cut opening, and slightly tore it. On the following day she passed, as near as could be ascertained, a pint and a half of the same dark fluid, mixed with fæces, and the abdominal swelling was much reduced. There was some pain in the right iliac region on the third day, with tenderness on pressure, but it passed off under the influence of some

Dover's powder, with fomentations and poultices. She remained in the hospital for a fortnight, and then went out, promising to attend as an out-patient, but she never made her appearance. When she left, the opening in the rectum had not closed.

"The particular point in practice," says Dr. Oldham, "which these cases illustrate is, the ease, safety, and success with which the uterus, distended with menstrual fluid, may be relieved by puncture through the rectum, when the organic defect is a congenital absence of the vagina, or its occlusion by adhesion and cicatrization of its walls. Other operations designed to separate the interspace between the urethra and rectum, either by the knife or by traction, and so form a vagina in the connecting tissue, have been designed and practised by different surgeons, sometimes with success, at others with a fatal issue. These operations, in the most skilful hands, are difficult to accomplish, and most hazardous to the patient,* and they have been deliberately rejected, in the judgment of competent men, as being too perilous to be justified. As a channel for the flow of the menses, there can be no compensating advantage in an artificial vagina over an opening through the rectum. It is true that, if the patient escape the dangers of having an opening made into the urethra, bladder, or rectum, and these organs are left with their functional power unimpaired, the channel thus formed might perhaps be kept open more readily than by the other method. But puncture per rectum is so slight and feasible an operation, that I have preferred to repeat it as the occasion may require, to exciting the irritation, and possibly the inflammation, which attempts to keep the opening patent would occasion, especially too when this may, as in Case 1, spontaneously occur. To attempt anything beyond making an efficient outlet for the menses, that is, to expect to form a vagina which shall admit of marriage and child-birth is, in my opinion, to try for more than surgery can do. It appears to me to be impossible for a passage formed in the connecting tissue between two canals, to perform the entire functions of the vagina, and it is far better that marriage should be known to be a physical impossibility, than that its consummation should provoke disgust, disappointment, and estrangement.

"The large size of the urethral canal in Case 1, which allowed the finger to pass into it without pain, and yet was unattended with incontinence of urine, is worthy of notice. A similar formation of the canal attended a case of imperforate vagina, which I published in 'Guy's Reports' (Series II.) vol. vi. p. 354. In both these instances the extreme width was congenital and part of the deformity, and not the result of artificial dilatation.

"The collection of menstrual fluid within the cavity of the uterus was not so great in Case 1 as to represent the sum of a series of monthly fluxes from the date of its first commencement to the time of the operation. There were undoubtedly long intervals of amenorrhœa, and the feeble state of health which generally accompanies menstrual retention would favor the suspension of the flow. On one occasion, when the patient had a slight attack of fever, I felt persuaded that the contents of the uterine tumor absolutely diminished. In the physical diagnosis of these cases of entire absence of the vagina, as contrasted with a partial development of the canal or a central closure of it, I lay great stress on being able to feel the os uteri through the rectum in a closed state. If there be a portion of the vaginal canal developed above, the menstrual fluid is safe to pass into it, and, as it collects, to bulge it out, and by degrees to stretch out the os uteri and cervix, and last of all the cavity of the body of the uterus. In a case which was published in an early number of the 'Guy's Reports,' with a drawing, this is admirably shown, and the preparation which it fell to my lot to be able to procure, is in the museum of the hospital."†

* *Vide* Amussat's case, "Gaz. Méd.," Dec., 1835.

† Vol. ii, (Series i.), p. 244.

ART. 130.—*On some of the prevalent Errors in relation to the Predisposition to Hysteria.* By M. BRIQUET.

(*L'Union Médicale*, Nos. 36, 39, and 40; and *Med. Times and Gazette*, Oct. 31, 1857.)

M. Briquet believes that most writers have been indebted more to their imaginations than to the observation of facts for the pictures they have drawn of this disease. It has been attributed by most of them either to unsatisfied sexual desires, or to excessive excitement of the uterus and its appendages, and a fanciful etiology to correspond has been invented. The object of this paper is to show that these and other preconceived ideas have no solid foundation in fact.

1. The *hysterical constitution*, about which so many positive assertions have been made, has in fact no existence—the affection occurring in women having the most opposite external appearances. The author examined 425 cases of hysteria in this point of view: of these, as regards height, 127 were tall, 168 medium size, and 106 short; as to strength, 99 were strong, 36 medium, and 26 weak; as to flesh, 194 were stout, 106 medium, and 92 thin and spare; as to color, 220 were fair, and 164 dark, 27 having the hair light, 39 black, 177 light chestnut, and 188 deep chestnut. In 168 the face was pale or brownish, and in 174 fresh colored. Thus it will be seen these were the ordinary varieties met with among women in general.

2. The *temperament* is also various enough. The following is the classification M. Briquet made of 383 cases. In 143 it was lymphatico-sanguineous, in 125 lymphatic, in 91 nervous or lymphatico-nervous, in 12 bilious, and in 11 sanguineous. These are evidently very much the proportions that are found in females of from 15 to 30, part inhabitants of the country, and part of the towns, as was the case with these. At all events, there is no temperament that can properly be called hysterical.

3. *Moral disposition*.—That which is not discoverable in the physical constitution of hysterical females is, however, very evident in their moral disposition. So much is this the case, that of 430 cases occurring to the author, not more than 20 at the utmost have not manifested it. The characteristic of this is marked *impressionability*, foreshadowed in childhood by great timidity, excessive susceptibility to blame, and a disposition to shed tears easily.

4. *Mode of life*.—Another of the axioms that have been laid down as undoubted, is, that hysteria is the prerogative of the wealthy and luxurious, and that poverty is a security against its occurrence. It is a complete error; the common people being the subjects of hysteria in almost a double proportion to the other classes. At a particular epoch M. Briquet visited all the female patients in the medical and surgical wards of La Charité, with the exception of those suffering from epilepsy, apoplexy, insanity or delirium. The number amounted to 203, and of these 65 were hysterical (38 with convulsive paroxysms), 49 were impressionable, and 89 only were neither hysterical nor impressionable. Thus, among the common people there was 1 woman in 5 who had hysterical paroxysms, and 3 out of every 8 were the subjects of hysteria. So far from being exaggerated, the statement is rather below the truth. But where is the practitioner who meets with 3 cases of hysteria among 8 of his private patients? According to the experience of many M. Briquet has consulted upon the subject, there is about 1 in 8 or 10 in the easy classes of society, not alluding to the very highest. The charms and simplicity of a country life, too, have been sufficiently praised, and nervous diseases have been said to be the almost exclusive affliction of civic life. M. Forget, in 1847, somewhat startled this belief by showing how frequently hysteria occurs among the simple Alsatian peasantry. M. Briquet has obtained cognizance of the place of abode and of early education in 324 cases of hysteria, and of these 168 were town born and bred, and 156 from the country—the majority of these latter having in childhood labored in the fields. In the case of 42 of these country girls their mothers had been hysterical, 29 suffering from paroxysmal attacks. Professor Lebert, of Zurich, also assures the author that hysteria is just as often seen in the poverty-stricken cantons of Switzerland as in the

most flourishing ones. A too tender and luxurious education has been assigned as a predisposing cause; but of 81 cases of hysteria occurring before the age of puberty, in 21 the harsh treatment they had been subjected to was the principal cause of the disease. A third portion of the author's collection of cases had been submitted to ill-treatment or privation during childhood. In place of a tender education being assigned as a predisposing cause, it would be more just to thus stigmatize a harsh one.

5. *Continence* has been stated by many authors as an unnatural condition, predisposing to hysteria; but when it is remembered that the majority of cases occur between 12 and 20, we naturally ask at what age it becomes unnatural, as also for the explanation of the occurrence of the disease in 86 children under 12 years of age. Various authors since the time of Galen have deplored the fate of widows, as the necessary victims of hysteria; but in point of fact their solicitude has been little needed, inasmuch as among 375 cases collected by Landovsky only 12 of the subjects were widows, as were only 14 in the author's own 430 cases, *i. e.*, 26 in 800 cases, or 1 in 30. Of the author's 14 cases, too, in 6 the hysteria appeared on the day of the husband's death, and in 4 during the first month after it, and should surely with more probability be referred to moral emotion. Hysteria has been said to be, on the one hand, common among nuns, and, on the other, rare among women who give free vent to their sexual desire. But in point of fact it is rare in convents, and is chiefly found in those in which there is great fasting and maceration. The reverse position so strongly maintained by authors may also be disposed of. Thus of 300 hysterical females above the age of 15, 139 were married or kept women, and among them had 367 children, not counting miscarriages. Among the 161 remaining, very few resigned themselves to continence. At the Lourcine, where syphilitic workwomen and servants repair, among 424 patients, 169 were hysterical. As to prostitutes, of 197 applying to St. Lazare on account of syphilis, 106 were hysterical, 28 very impressionable, and 65 neither hysterical nor impressionable. It results from all this that continent women are rarely hysterical, those who do not observe continence are frequently the subjects of hysteria, while those who pursue the extreme of incontinence are the most liable of all. The reason is obvious. Among these different classes of women, the first lead peaceable lives, the second have much to go through, while the last are a prey to frequent and violent emotions. Next we may consider the effects of marriage on hysterical women, which, to judge from the statements made, have been truly remarkable. But among M. Landovsky's and the author's 800 cases, in only 29 instances did decided advantage follow marriage, notwithstanding the complex character of the modifications ensuing upon this state.

6. *Menstruation and affections of the uterus.*—This class of influences has been raised to the highest rank by those writers who are determined at placing the seat of hysteria in the uterus. 1. This has been supported by the supposed effects of normal or abnormal conditions of the menstruation. From the author's observations, however, made on 411 hysterical women, in but 136 had there been any derangement of the menses. Of 237 deliveries of hysterical women, in but 12 were there any convulsive paroxysms, some of which too might have been examples of eclampsia. 2. According to authors, it is common to observe hysteria in affections of the uterus. Now these diseases are exceedingly common, and the connection ought to be easily demonstrable. But this is not the case, for Landovsky and other partisans of the opinion are able to collect but some 40 cases of the affections of the genital organs giving rise to hysteria—few enough as compared with the thousands of cases daily occurring. Practitioners, moreover, having much to do with the various female diseases entirely deny such connection.

ART. 131.—*Anteflexion of the Uterus considered as a Normal Anatomical condition.* By Dr. J. H. BENNET, Physician-Accoucheur to the Royal Free Hospital.

(Proceedings of Royal Med. and Chir. Society, i. No. 3, 1857.)

The author's attention was attracted some years ago, during a series of in-

vestigations into the condition of the os internum during life, by the anatomical fact that the uterine cavities and the uterus itself, in women who have never borne children, are generally more or less anteфлекed. He thinks it proved that this was misunderstood, because stem-pessaries are invariably made perfectly straight, and anteфlexion has been invariably described as an abnormal or morbid condition. M. Huguier, however, published a memoir some years ago, describing anteфlexion as an occasional congenital condition; but he described it as accidental and exceptional. The author's researches were begun with a view to determining the value of contraction of the os internum as a cause of sterility. He found that when the uterine sound met with resistance there a small wax bougie could be passed, which, if allowed to remain for a minute or two in the uterus of a woman who had borne no children, presented, when withdrawn, a slight anterior curve. The same effect continues in some degree after one or more parturitions. This state can scarcely be recognized by digital examination under ordinary circumstances, but is readily perceived when decided, and may become very great in exceptional cases. The author then adverted to the observations of M. Boullard on this subject, who describes anteфlexion as the natural anatomical direction of the uterus. He finds it most marked in the fœtus, less so in the child, and least in the adult; and that it ceases to be perceptible in most women who have borne children. The author thought that M. Boullard had rather exaggerated the degree of curvature. He next pointed out the pathological bearing of anteфlexion, believing that it might be treated as a morbid state, especially if the uterus be enlarged by chronic inflammation, which would render the curvature more marked. He thought attempts to straiten the uterus likely to be injurious, and that no treatment ought to be employed except what might be necessary to relieve the congestion of the organ. He did not think it had any definite relation to irregular menstruation, but when both conditions were coincident the general health was much below par, and the anteфlexion was commonly very decided.

ART. 132.—*On the use of the Speculum in the Diagnosis of Uterine Diseases.*

By Dr. ROBERT LEE, Physician-Accoucheur to St. George's Hospital.

(*Proceedings of Royal Med. and Chir. Society*, i., No. 1, 1857.)

The author referred to the tabular statement of 220 cases of real and imaginary disease of the uterus, published in the thirty-eighth volume of the "*Medico-Chirurgical Transactions*" (v. "Abstract," XI. 243), and presented in a similar tabular form the details of 80 additional cases, which had since come under his observation. Of the 300 patients, 47 were unmarried; 1 had barely completed her eighteenth year, several were under twenty, and the majority under thirty years of age, and were suffering from hysteria, leucorrhœa, dysmenorrhœa, or some nervous affection of the uterus, without inflammation, ulceration, or any structural disease or displacement of the organ. In case 256 the patient had been told that the womb was prolapsed and much ulcerated, and an instrument had been introduced for six weeks, with an aggravation of all the symptoms. The hymen was found so perfect on examination that it was impossible to reach the os uteri without using an unjustifiable degree of violence. On the ground of morality, and on every other ground, he could see no defence for the employment of the speculum in these 47 cases. Of the 300 patients 70 were barren, and the sterility was not removed nor the other symptoms relieved in a single instance. Several of these individuals spoke with horror and shame of the treatment to which they had submitted. A considerable number of the cases were suffering from cancerous disease, in all of which the symptoms seemed to have been aggravated by the treatment. In Case 236 the character of the disease was unmistakable, but after an examination with the speculum a favorable prognosis had been given, and the actual cautery employed for months, and hopes of recovery held out to the last. The author expressed his conviction, that neither in the living nor in the dead body had he ever seen a case of simple ulceration from chronic inflammation of the os or *cervix uteri*, and to apply the term to states of the os uteri in which the mucous membrane, or, as it is termed by some, the basement membrane, is not destroyed

by ulceration, was an abuse of language calculated only to deceive and mislead the members of the medical profession, from whom the truth had been carefully concealed. The speculum emanates from the syphilitic wards of the hospitals at Paris, and it would have been better for the women of England had its use been confined to those institutions.

ART. 133.—*On the connection of Puerperal Fever and Erysipelas.* By
Dr. J. LEVERGOOD, of Wrightsville, Pa.

(*North American Medico-Chirurgical Review*, July, 1857.)

It is not necessary to accumulate proof of the intimate connection between puerperal fever and erysipelas, but it is well to refresh the memory now and then by facts such as are here recorded and commented upon by Dr. Levergood.

"In the month of March, 1853," says this gentleman, "Dr. B. C. Lloyd, while professionally attending, in this place, for phlegmonous erysipelas, involving the entire left arm, a man whose system was very much debilitated by the excessive use of ardent spirits, was summoned to Mrs. D—, in labor with her third child. This lady lived more than a mile from town, in what is known as the 'York Valley,' renowned for its beautiful farms, fertile soil, and wealthy inhabitants, and proverbial for its healthfulness. At the time his attendance upon her began, there was no prevailing epidemic disease of any kind whatever, and Mrs. D— was enjoying perfect health. An examination showed the vertex to be the presenting parts, and her labor terminated as easily and speedily as usual in such cases. On the third day, puerperal fever symptoms, one of the most prominent of which was abdominal tympanitis, developed themselves, and two days afterwards she expired.

"The second case was that of Mrs. S—. This was her sixth accouchement, and, like all the previous ones, it ended as favorably as an entire natural labor in a female who, at the time of and previous to her confinement, was in the enjoyment of the most robust health, could be expected to end. She, also, lived in the 'Valley,' some two miles from town, and about one mile from the residence of Mrs. D—. Symptoms of puerperal fever manifested themselves on the third day subsequent to delivery, and, notwithstanding the prompt assistance of a physician from York, all efforts to save her life proved unavailing.

"The third case was that of Mrs. N—, also the wife of a Valley farmer, and living fully five miles from town. This was not her first parturition, but the number of children she has had the writer is not aware of. The whole course of the labor differed in no material respect, except in its being a twin case, from those I have mentioned. She, also, was attacked by the disease, and, although, as in the previous cases, active and decided antiphlogistic treatment was promptly employed, the case had a fatal termination.

"Previous to his attendance upon the case of phlegmonous erysipelas, there had been in the charge of Dr. Lloyd, both in town and country, a number of midwifery cases, and, in no single instance, did peritonitis make its appearance; but from the time he took charge of the case mentioned, until he relinquished it, embracing a period of three weeks, he lost every parturient female, viz., the three I have mentioned, to whom he was called. The writer was engaged in obstetrical practice at the same time, some cases of which were not very remote from those of Dr. Lloyd, but in none did the disease make its appearance. It therefore appearing very evident that the case of phlegmonous erysipelas was the source from which emanated the *materies morbi* that was proving so disastrous to the childbed women under his care, and that he was the medium through which it was disseminated, the doctor at once relinquished any further connection with the case. The writer being then solicited to take charge of the man, positively declined to do so, feeling morally certain that his patients would share the same fate as those of his friend; the services of a physician from a neighboring village upon the opposite side of the river were secured, and from that time, no other cases of the disease appeared."

ART. 134.—*On Chlorate of Potass Injections in Leucorrhœa and Ulceration of the Os Uteri.* By Dr. BEDFORD BROWN.

(*American Quarterly Journal of Medical Science*, July, 1857.)

Dr. Brown relates four cases of leucorrhœa with ulceration of the os uteri, in which he employed injections formed by dissolving ʒj of chlorate of potass in ʒviij of rain water. The cases are not very conclusive; but it is not improbable that the injection was of some service, and will be so again.

ART. 135.—*On the local application of Carbonic Acid Gas in Irritability of the Bladder, &c.* By Dr. CHURCHILL.

(*Dublin Quarterly Journal of Medicine*, Aug., 1857.)

At a recent meeting of the College of Physicians in Ireland, Dr. Churchill read a paper in which he showed how he had employed carbonic acid gas locally, with much benefit, in irritability of the bladder, uterine irritation, hysterical vomiting, &c.; but he does not go into particulars as to the mode in which he obtained and applied the gas. One case is as follows:—

This case, M. A.—, I first saw in another hospital for a granular erosion and congestion of the cervix uteri, which was relieved by the usual means. I do not remember that she made prominent mention of the condition of the bladder; at all events she left the hospital, and I lost sight of her until she entered the Meath Hospital under Dr. Lees, who asked me to examine her, and by whose kindness I am allowed to bring forward these particulars. I found the cervix free from disease, and her whole complaint directed against the bladder or urethra. She said that she could only retain her water for a short time, that she suffered great pain and tenesmus immediately it was passed, whether she passed much or little at a time. The quantity was not increased, but it came away in spoonfuls, and she had constantly an uneasiness on the pubis and round the loins. The urine was acid, with considerable mucous deposit, and sometimes striæ of blood in the mucus. Her health was suffering considerably, and especially from want of sleep, for she had to pass water twelve or fourteen times during the night, and once as often as eighteen. The demand was as imperative and nearly as frequent during the night as during the day. The pulse was quiet; tongue slightly furred; appetite bad; and bowels pretty regular. Menstruation was regular. At first we suspected it might be a case of urethritis, and the more as there was one part of the urethra somewhat painful to the touch of the catheter. But we soon saw that the bladder was prominently involved, and we tried alkaline medicine, opium by the mouth and in the form of vaginal pessaries, and in enemata, with hip-baths. Some benefit was derived from these measures, but the case was still unsatisfactory when Dr. Lees allowed me to try the carbonic acid gas to the vagina. From the first she derived more relief than from any other remedy, and its repetition was gradually followed by a subsidence of all the distressing symptoms, until she was able to leave the hospital in a state of comfort.

Some weeks after she called at my house, first, she said, to tell me how much better she was, and to thank me, and also to apologize for having told me a lie as to the duration of the complaint, which, instead of a few months, had been of nine years' standing, and for which she had undergone a great variety of treatment. Her excuse was that she thought she would have been sent out of hospital if we knew that she was such an "old customer."

ART. 136.—*Albuminuria in certain cases of Puerperal Fever.* By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Edinburgh Medical Journal*, Aug., 1857.)

In obstetric, as in medical practice, various cerebral and nervous complications have of late years been traced to the previous existence of albuminuria. Thus, many cases of convulsions, coma, amaurosis, &c., have been found to co-exist with, and depend upon those morbid states of the system which are

connected with the presence of albumen in the urine. In what exact pathological relation the albuminuria stands to these various complications, it was not Dr. Simpson's present object to inquire. But he wished to point out another morbid complication with albuminuria in the puerperal state, in order that the subject may be fully investigated as occasion occurs. In the last four instances of puerperal mania which he had been called to in practice, albuminuria existed at the commencement of the attack of each; and, when we see albuminuria in the parturient female, so often lead on to convulsions and coma, we cannot be surprised at meeting with this other cerebral complication in connection with it. In one of these cases, puerperal convulsions occurred before delivery, with very marked albuminuria; and, after a short period of convalescence and absence of the albumen, acute puerperal mania set in, and the urine, on examination, again proved highly albuminous. In another of the cases, there were two sudden attacks of puerperal mania, with a week's interval between them. At the commencement of both attacks, the urine was charged with albumen, and, in the interval, was free from it. In such cases, we shall probably only find the albuminuria in a marked form, at or immediately after the commencement of the attack of mania; and the co-existence of sleeplessness, and albuminuria or its symptoms, should always put us on our guard against a maniacal attack. In the last case which he had seen, the puerperal mania lasted for two or three weeks—the albuminuria, which was at first well-marked, disappearing before the restoration of the mental powers.

ART. 137.—*On the use of Chloroform in Puerperal Insanity.* By Mr. WATERS, Surgeon to the Liverpool Dispensary.

(*Journ. of Psychol. Med.*, Jan. 1857.)

There are cases in which, from the continued restlessness and obstinate refusal of the patient to take anything whatever, opium cannot be administered; and again there are other cases in which, although administered, it produces no good result, but seems rather to increase the mental excitement. In cases of this kind, the long-continued restlessness, insomnia, and absence from food, produce a state of exhaustion which, if not relieved by the introduction of nourishment into the system, and by rest, will soon terminate fatally.

In cases such as these, Mr. Waters is of opinion that chloroform will be of great value, and he adduces the following cases in corroboration of this opinion:—

CASE 1.—C. D. E—, æt. 24, of full habit and nervous temperament, was admitted into the Liverpool Royal Hospital, as a patient.

Six weeks prior to admission, she was confined with a girl. She continued well for three weeks, and at the end of that period began to exhibit symptoms of a deranged state of mind. She had been of active habits, but had confined herself almost entirely to household duties. There had been no previous attack. Treatment had been adopted at her own home for a short time, and for three days before admission she had been put under restraint; during this period she had been very violent, and had refused food.

When admitted into the asylum, she labored under alternate depression and excitement; there was an almost entire absorption in religious matters, and great irritability of temper. She was very restless and sleepless, and required constant watching to prevent her committing violence. She refused all food, and objected to everything intended for her comfort.

There was nothing remarkable about her physical condition. She was tall and well-made. One of the mammae showed symptoms of incipient inflammation; the pulse was quick, and the tongue furred.

A saline aperient was ordered, and belladonna lotion to the breast.

She continued in the condition above described for four days. She refused all food, had no sleep, and was very much excited. There was, however, no heat of scalp. She was ordered effervescing draughts, with one-third of a grain of morphia, every three hours; and a blister was put to the nape of the neck. On the evening of the fifth day, in consequence of her excited condition, a powerful opiate was ordered for her, but no good result was produced.

On the sixth day there was no improvement; symptoms of exhaustion were coming on, and she was getting emaciated from want of food, which she still refused. She had had very little sleep, although she had taken the morphia regularly. She was put under chloroform, and an enema of beef-tea was administered whilst she was under its influence. The morphia was omitted. She slept for several hours after the exhibition of the chloroform, and when she awoke was much more quiet, and remained so for two days, during which she took her food. At the end of that time she again refused food, and had a partial return of her previous symptoms; and as these did not subside, she was again put under chloroform on the tenth day, and another enema of beef-tea was given; the same result followed as before, only to a more marked extent. She now sensibly improved, and on the twenty-first day, eleven days after the second exhibition of the chloroform, I find the following note: "Greatly improved, eats and sleeps well, answers questions for the first time." This favorable state of affairs continued up to the forty-fourth day; on that day she became restless and excited, and chloroform was again exhibited. After that date she had no further relapse. She steadily improved, both mentally and physically, and was discharged well after having been under treatment in the asylum nearly four months. I have lately learned that she continued well after her discharge, and has since given birth to a child, no symptoms of mania having been developed.

CASE 2.—A. M. S., æt. 26, of spare habit and nervous temperament, was admitted into the Asylum on ———.

A little more than three weeks prior to admission she gave birth to a boy—her fourth child. There was nothing remarkable about the labor, except that it was attended with some amount of hemorrhage. All her previous confinements had been good, and she had always made a good recovery; but during the latter part of her last pregnancy, her health had been unsatisfactory. She became low-spirited and desponding, and fell into a low physical condition generally; she took no exercise, and suffered much from constipation of the bowels. She went on well after her confinement—except that she had but little milk—up to about ten days prior to admission—viz., about a fortnight after the birth of the child. Symptoms of a somewhat hysterical nature seem to have come on at that time, and she said she was going out of her mind. Three days before admission she became violent and excited in manner, and incoherent in speech. It was stated on her admission that she had had no regular sleep for ten days, and had taken but little food. Her general habits were said to be sedentary and temperate.

When admitted into the Asylum, she was very restless, and could not be kept quiet for a moment. She was constantly talking in a very incoherent manner; she fancied she was subjected to shocks of electricity, and that she was beyond the hope of salvation. There was no peculiar physical conformation about her; she was thin, of moderate stature, and rather intelligent-looking; the pulse was rapid and feeble. She was kept quiet, and constantly watched for three days; but as the symptoms did not mend, and she had had no sleep, she was put under the influence of chloroform for a short time. She slept but little after it, and on the following day was very restless. She was ordered a brisk cathartic. She was more quiet after the bowels had acted freely; but the next day the restlessness and want of sleep returned. Chloroform was again exhibited at night. It produced but little effect, and the case now began to assume a serious aspect, for the patient was getting worn out, from the fact that she took but little food, and had but little sleep. In order to prevent her sinking from want of nourishment, an enema of beef-tea was administered under chloroform. She retained the injection, and slept for the first time for an hour and a half. It was repeated on the following day under chloroform, when she slept for three hours; this was on the eleventh day after admission. She now began to take food, and to pass her motions, of a healthy character, regularly. On the twelfth day chloroform was again exhibited at night; but it produced no sleep; and, consequently, on the following night, she had thirty minims of Battley's solution. She slept after taking the draught for five hours, and was much more quiet the next day. The medicine was repeated, but it

produced no sleep, and the restlessness returned, and she again refused food. The enema of beef-tea was repeated under chloroform. For the next few days she remained tolerably quiet—slept for a few hours every night after chloroform, and took some food. On the sixteenth day she had a brisk cathartic of croton oil, which seemed to be attended with benefit.

On the eighteenth day the chloroform was omitted, and tincture of henbane was tried—administered every four hours; but it produced no sleep; and forty minims of Battley were tried with the same result. On the twenty-first day she suddenly improved; she had been restless during the day, but in the evening she retired to bed of her own accord, and slept. From this day she began to improve in her physical condition; but for some time there was no marked improvement mentally. She continued under treatment for upwards of seven months, and was then discharged. At that time her general health was good, the catamenia had returned, and the mind was becoming gradually restored.

I have lately learned that the patient after her discharge perfectly recovered her mental faculties.

CASE 3.—A female, æt. 28, of spare habit and nervous temperament, was admitted into the Asylum on ———.

About nine weeks before admission she gave birth to a boy. No history of the confinement could be obtained; but it was stated that for nine months previous to that event she was so ill as to be obliged to keep her bed. No account, however, was given as to what she suffered from. About a week before admission, symptoms of insanity first appeared. She became very violent at times, and threatened to throw herself from the windows of her house. She was placed under treatment, but no benefit took place. She suffered from fits of a paroxysmal character, with lucid intervals. After her admission into the Asylum she became exceedingly violent at times; she had a recurrence of fits of an epileptoid character; she was very restless, and would not answer when spoken to. She labored under the delusion that her blood was boiling, and that she had wheels in her inside. In physical condition she was low, being much emaciated—to such an extent even, that the pulsations of the abdominal aorta could be distinctly felt on placing the hand on the surface of the abdomen.

On the second day of her admission the fits continued, and she refused to take food; she passed a quiet night. From this date up to the twenty-eighth day, there was but little improvement. On account of her restlessness and want of sleep, she was frequently put under chloroform at night, almost always with the result of giving her a quiet night. At times she refused food, and enemata of beef-tea were administered. Morphia was tried on one or two occasions to procure rest, but without effect. She required constant watching, and was kept in the padded room. She had a great tendency to injure herself, and if an opportunity were allowed her, she would knock her limbs and head against the walls, and on two or three occasions she thrust her head through panes of glass. Frequently she would refuse food for an entire day, and, on the next, eat everything placed before her. She was allowed anything she would take; but she continued up to this period much emaciated. She went on with but little alteration for two months, the chloroform being occasionally administered, and also the beef-tea enemata. She subsequently began to improve, and at the end of the seventh month she was discharged at the request of her friends, nearly well.

I have lately learned that after her discharge she perfectly recovered, and continues well.

ART. 138.—*On Abscesses of the Breast; their prevention by friction; their treatment by means of compressed sponge.* (1) By Dr. FOSTER, late Physician to the Bellevue Hospital; and (2) Dr. JOHNSON, House Surgeon to the same hospital.

(*New York Journal of Medicine*, Sept., 1857.)

1. After some general remarks upon the prophylaxis of milk-abscess, &c., Dr. Foster proceeds to speak as follows:—

"No doubt the first and most important indication is to prevent the accumulation of milk in the breasts. He who succeeds in doing this has overcome the chief source of danger of abscess. With this in view, I examine the breasts carefully on the second day after delivery, and direct the nurse, in case there should be the slightest hardness, to rub them well with warm oil *until they are soft*, and to repeat the operation as often as the hardness returns. This is a very common and a very simple direction, and yet it is very rarely carried out efficiently. When it is done well, it is worth more than all other means put together to keep the breast in good order. I do not despise cathartics, and nauseants, and sudorifics, when inflammation has commenced, though even then I do not rely *chiefly* upon them to prevent the formation of matter; but I must express my disapprobation of poultices with a view to resolve the hardness; and if it were necessary, I would dispense with all other means, excepting the nursing of the child, and rely upon the rubbing alone, always provided it could be done frequently and efficiently.

"A great element of success is to commence early—*obsta principii*. The rubber should stand behind the patient, and having lubricated the whole organ freely with oil, should use both hands, one for the friction and the other for counter-pressure, rubbing in the direction of the milk ducts, *i. e.*, from the periphery of the breast towards the nipple. If this is done with *firm pressure*, a few minutes will generally suffice to reduce the organ to a soft condition; and in case the milk has come, it will flow freely from the nipple. If the child is vigorous and takes the nipple well, there will usually be no need of pursuing this plan after two or three days. But it is desirable to keep an eye upon the organs, and in case any induration remains after nursing, to rub it away at once.

"I have intimated that it is difficult to get this well done. This is sometimes the fault of the patient, and sometimes of the nurse. The patient's breasts are very tender to the touch, and she thinks she can not bear the rubbing. But if it is done rightly, the pain will be of very short duration, and at the end of a few moments she will be able to bear any amount of pressure without suffering in the least. There seems to be a certain amount of tact requisite for this little manipulation, which many nurses never acquire. In such a case, I think it is the duty of the medical attendant to lay aside all considerations of dignity, and do it himself. But as the physician cannot be constantly in attendance, it is necessary, if after one or two trials the induration is not permanently dissipated, to resort to other means. And here we have a most invaluable resource in the compressed sponge.

"For the suggestion of this mode of treating such engorgements, I am indebted to Dr. J. P. Batchelder, of this city, who has applied this article to so many excellent uses. Its use in the treatment of open breast abscesses I believe I was the first to test, and it is a chief object of this paper to record the results of the method. The mode of preparing the sponges is very simple. A selection should be made of specimens which combine softness with elasticity, and of a size to suit the indurated portion. After freeing them from sand they should be dried, and then subjected to a heavy pressure for twenty-four hours. A common letter-copying press answers the purpose exceedingly well. They are then to be placed upon the breast and confined by a roller bandage, after which they are to be thoroughly saturated with lukewarm water. The nipple should, if possible, be left exposed, so that the child may nurse as usual. I will relate briefly the first case in which I adopted this plan. It has proved equally satisfactory in every instance in which I have employed it since.

"A lady whom I had attended in three confinements was, after the third, threatened with abscess in the breast. I directed, as usual, the frictions with warm oil, and administered, subsequently, cathartics, and nauseating doses of tartar emetic. The inflammation was thus kept in check, but the induration continued. This patient had a most faithful nurse, who rubbed the breast very perseveringly for several days, but without much effect. Satisfied that *the want of success* was due to the manner of the rubbing, I resolved to rub

it myself, and in twenty minutes or less, the breast was completely soft. Next day, however, it was nearly as hard as ever. I now determined to apply the compressed sponge. Two days' wearing of this entirely removed the hardness, which did not again recur.

"I have pursued the same plan with the like success in engorgements occurring at a later period in lactation, where the frictions with oil had failed to subdue the hardness."

Dr. Foster then institutes a comparison between his method of treatment and M. Chassaignac's treatment *par seclusion*, and after this, he relates four cases in which his own treatment was applied successfully.

2. Dr. Johnson relates fourteen cases of mammary abscess treated with compressed sponge after Dr. Foster's method, and gives the following particulars of the method as modified by Dr. Stephen Smith, one of the surgeons of the hospital.

"The softest pieces of sponge should be selected, each being large enough to cover the entire breast. The sponge should be carefully washed to remove any gravel, shells, &c., it may contain; and when it is thoroughly dried, it is to be compressed for a long time under a heavy weight, or between the lips of an ordinary carpenter's vice. The sponge, when thoroughly pressed, should be bound as firmly to the breast as the patient will allow, by means of a bandage passing several times around the body above and below the other breast, a piece of lint being placed between the breast and the sponge, to prevent the latter from irritating. It is then soaked with cold water, and the bandage preventing the sponge from expanding outward, its expansion makes the desired pressure upon the breast. The patient usually complains of pain for ten or fifteen minutes after the first application. The temperature of the water-dressing is soon raised to that of the body, and thus we have the essential elements of a poultice—heat and moisture—without the inconvenience of an ordinary poultice. This soft, yet firm, compression adapts itself even and equally to the whole breast, and the sponge not only forces out the matter, but absorbs it; the sponges are to be kept wet during the whole time of their application. The patient soon becomes accustomed to them, and the alleviation of the suffering is so great, as to cause her to request the continuance of the treatment. The sponges should be renewed daily."

Two of Dr. Foster's cases will serve as illustrations of the rest.

CASE 1.—Mrs. H. J.—was confined with her first child August 1, 1855. I left town a few days after, and on my return, about the first week in September, found her with a very large abscess, involving nearly the whole breast. The patient, naturally robust, was in a state of extreme prostration. The breast was opened, in the course of the next few days, in five different places, and discharged an enormous quantity of pus. A probe could be passed its whole length, in different directions, through and under the gland. The entire organ was in a state of induration and enlargement. No milk could be got from the nipple. On September 13, a new point of inflammation having appeared on the upper part, and the skin being already bright red over a space of two inches square, I applied two sponges—one to the newly inflamed part, and the other to the lower part of the breast, covering all the incisions.

September 14.—Inflammation and hardness entirely gone in the first-named locality; the size of the breast diminished one-third; the cuts healing, and the milk running freely.

Being unable to obtain a supply of the compressed sponges, I did not repeat them on the 14th; but they were re-applied on the 15th, 17th, and 18th. On this last day, the wounds had all healed, excepting one near the nipple; the milk flowed freely. Breast about one-half the size of the other. Some induration in the lower third only.

19th.—Further improvement. Sponges omitted—the breast being merely suspended in a sling; patient rode and walked out.

20th.—Some soreness and induration in upper part of breast. One of the cicatrized points below looking red, I opened it with the end of a probe, and let out two or three drops of pus. From another, which was opened in the same way, a few drops of clear serum flowed. Re-applied sponges.

21st.—The fistulous opening near the nipple gave exit, after pressure upon the upper part of the breast, to about a drachm and a half of sero-sanguineous matter. The other openings firmly healed again, and the breast was everywhere softer, and free from tenderness.

From this date to the 26th the sponges were applied daily, with one exception. On the 27th, the patient left town on a visit to some friends, the general health entirely restored—the whole breast being soft; the milk flowing very freely; the fistulous opening almost healed, barely receiving the point of the probe, and yielding a single drop of serum. From the outset to the close of this case, there was no pain following the application of the sponges—the patient on the contrary, obtaining marked relief under their use. A very slight inconvenience was felt, the first day or two, from the tightness of the bandage. The patient was allowed full diet, with wine.

A year afterward, I attended this lady in a second confinement. There was some threatening of inflammation a second time, but it disappeared after one or two rubbings, and she nursed her child on this side as well as the other.

CASE 2.—Mrs. W— was confined near the last of May, 1856, with her second child. This lady had been attended in her labor by a homœopathist, and was doing well until about the tenth day (notwithstanding a very constipated state of the bowels, which, as usual, had not been interfered with), when the breast began to inflame. It was treated lightly by the attendant, who left town, and I was called in on the evening of June 6th. Although there was some evidence of suppuration, I yet hoped to avoid an incision, and on the 7th I applied the compressed sponges, and continued them until the 10th, with entire relief of the pain, and subsidence of inflammation, when, finding that it was indispensable to evacuate the matter, I ordered a poultice, and opened the abscess on the 11th, giving exit to about half a pint of pus, mixed with milk. On the 12th I applied the sponges again, and continued them daily until the 17th. On the 14th the discharge consisted almost entirely of milky serum.

16th.—Dressing omitted at night.

17th.—A soft moist sponge substituted for the compressed.

18th.—Bandages omitted. Two or three drops of serum only from the cut.

20th.—Wound perfectly cicatrized; breast free from hardness everywhere, and milk flowing freely.

In this case the sponges were only required for five days after the abscess was opened.

ART. 139.—*On a new mode of operating in Vesico-vaginal Fistula.* By Dr. J. B. MINTURN, of New York.

(*Medical Times and Gazette*, May 30, 1857.)

In order to avoid the inconvenience arising from hemorrhage at the time of the operation, Dr. Minturn proposes the use of the "actual cautery in cases of small and moderately-sized fistulæ, the removal of the destroyed membrane around, and the indurated portions at the orifice, when they have become loosened, the coaptation of the edges of the resulting wound as if it had been made by the knife, and their retention in contact until union takes place, which I do not think would be prolonged much, if any, beyond the ordinary period required." He says further:—

"Having proposed this method and advocated it for more than a month past, I was a little surprised upon taking up the '*Medical Times and Gazette*' of the 11th inst., to learn that Dr. Beck had made an application of the principle, and effected a cure upon a case under his care in the Samaritan Hospital, without the credit being given to the originator, as it has appeared to me that I am, from the result of my agitation of the subject here. That notice has determined me to send you at once this official edition of 'novel plans' for publication, that the credit of them, be it valuable or not, may be secured where it properly belongs. Dr. Beck should have applied the *serre-fines* upon the pins which he used, then the case would have been complete. The closing

link in the chain has been for some reason left out; can an explanation be given?*



"The next step of the operation consists in introducing pins (fig. 1, A), across the lips of the wound, entering upon the vaginal mucous membrane, two, three, or more lines from the edge of the dissection, and coming out at corresponding points upon the opposite side, free of the mucous membrane of the neighboring organs, bladder and rectum. These pins, before their introduction, have a little square piece of cork (B) placed upon them by the side of the head. After having introduced the requisite number of pins at the distance from each other of about one-third of an inch, another little square piece of cork is passed upon each of the points to oppose the one which occupies the side of the head. This done, we proceed to the application of the *serre-fines* of Vidal (de Cassis), modified and made applicable to these operations, which M. Charrière, sen., has had made after my design (C).

"These *serre-fines* are of large dimension, and the branches made to form almost a right angle with the body and terminate at their extremity in a blunt hook, turned towards the body of the instrument. The branches of the *serre-fines* are made to embrace the lips of the wound previously approached by means of forceps, and rest upon the pieces of cork; at the same time the hooks are made to embrace the extremities of the pins, which serve to sustain them firmly in position.

"The heads of the pins are next made to approach the hooks, and the projecting points opposite are cut off to prevent their wounding the neighboring parts. By the pressure made by the hooks and branches of the *serre-fines* upon the pieces of cork, we obtain a regular and nearly uniform pressure upon the whole surface of the wound, and consequently the conditions for union are incomparably superior to those which are offered by the simple thread suture. Another advantage this method has over the ordinary suture, will be evident as soon as mentioned. The amount of irritation and inflammation excited in the parts by the presence of the thread or tape suture often destroy the conditions necessary for union by the first intention, and endangers the life of the patient. The amount of swelling which results causes the sutures to sink deeply into the tissues, destroying the parts underneath them by strangulation, or ulcerating their way out, before the adhesive conditions can be re-established. But it will be at once perceived from the analogy of their action in other parts, that the presence of the pins does not act injuriously against their establishment, whilst the *serre-fines*, accommodating themselves to the conditions of the contained lips, will expand in a hyperæmic condition of the parts, and contract again as that condition subsides, sustaining a continued and even lateral pressure upon a large extent of surface, which renders unnecessary the parallel lateral incisions usually practised for the purpose of relieving tension when

* We have published Dr. Minturn's reclamation, but can state that Dr. Beck had not only spoken of the combination of the cautery and suture for more than a month before he practised it, but that he had seen some *serre-fines* made by M. Charrière for Mr. Spencer Wells last September on a similar principle to those used by Dr. Minturn, yet he preferred the common harelip pin and twisted suture he had seen Mr. Wells apply in another case of vesico-vaginal fistula a few days before. Dr. Beck's patient was completely cured, and we do not see how the case could have been more complete.

the simple sutures are employed, or the division of the sphincter ani muscle, as is recommended in operations for the cure of recto-vaginal fistula.

"This new suture method possesses all the advantages of the twisted and quilled sutures in an eminent degree, without their inconveniences; and more, those last are nearly inapplicable in the vagina, for it would be extremely difficult to apply them in a depth often so great, and in a space so narrow, which has led to the abandonment of the process of M. Roux. But on the contrary, one of the advantages of this means of constriction is the facility with which it can be applied and removed, either with the fingers, a dressing forceps, or a forceps *ad hoc*.

"Moreover, by the use of the pieces of cork and serre-fines, we obtain the great advantage of distributing more equally the lateral pressure than can be obtained by either the twisted or quilled sutures, and the further advantage, as before stated, of adjusting pressure, which no other suture possesses.

"After an operation in which the bladder is involved, a catheter must be introduced and worn, so that no urine may collect, which, by distending this organ, and coming in contact with the paired borders of the fistula, would prevent union. If the operation does not involve the bladder, the urine need only be drawn off at regular intervals by the means of a catheter. For the first-mentioned purpose, M. Charrière, Sen., has had the following form of catheter made after my design, which may be worn with more comfort and less chance of being displaced than the ordinary instrument (see fig. 2). It is a modification of the one invented and employed by Dr. Sims.

"The instrument, as I have modified it, is composed of silver, between three and four inches in length, and curved somewhat in the form of the letter S, that its extremity may not come into contact with the wound, and by bruising it, interfere with the healing process. Its short length also prevents its making injurious pressure against any part of the wall of that viscus.

"The vesicular extremity, D, for the distance of an inch and a half, is furnished with four rows of holes, opposed to each other, of a line or more in



diameter. About an inch and a half from the last holes towards the vulvar extremity, are placed two rings, E, by which the catheter is secured in position by tapes attached to a band encircling the body. The vulvar extremity F, is made very oblique to facilitate the dropping of the urine, and around this extremity is placed a shoulder, G, above which is tied the neck of a gum elastic bag, capable of containing about a pint and a half of fluid, and having at the opposite and depending side another neck, to which is attached a stop-cock, through which the bag may be emptied without disturbing the catheter or inconveniencing the patient. This urinary bag may be very conveniently supported by means of the suspensory bandage, through which the stop-cock is made to protrude.

"By this arrangement the following advantages are secured: The catheter need only be removed often enough to be kept free from mucous and phosphatic accumulations, and the disposition to their deposit will be much lessened by preventing the entrance of air into the bladder through the catheter by this means.

"Also, by the use of the urinary bag the disgusting odor arising from the decomposition of the urine in an open vessel is prevented, as well as the inconvenience of such vessel in the necessary position.

"Again, after the removal of the pins, it is necessary that the catheter be continued for some time, and great care exercised, lest the weak cicatrix be

strained or lacerated. During this part of the treatment the urinary bag will be found especially convenient and necessary, as the patient need not then be confined to her bed.

"Upon the catheter, behind the two rings, E, may be placed very advantageously a disk of gum elastic, the size of a franc, which will prevent the pressure of the rings against the soft parts of the patient, and by the thickness of this disk of gum elastic, the length of the catheter in the bladder may be graduated, this organ being always much reduced in capacity by reason of the loss of substance it has sustained, and in a contracted condition, from being empty for a longer or shorter time."

ART. 140.—*Vesico-vaginal Fistula cured in five days by a new form of operation.*
By Dr. SAWYER, Master of the Coombe Lying-in Hospital, and Professor of Midwifery to the original School of Medicine, Peter Street, Dublin.

(*Lancet*, Aug. 22, 1857.)

CASE.—Fanny W——, æt. 24, remarkably small and very excitable; married fifteen months; first child; admitted into the labor ward at 3 P. M. on the 16th of May, 1856. She stated that labor had set in on the 15th, and that the waters had come away before her admission. On examination, the os was found fully dilated; head presenting; pains strong and frequent.

On the ensuing day, as she had not made progress, Dr. Kidd, the assistant, was sent for. He promptly introduced a catheter, though with considerable difficulty, owing to the pressure of the head on the pubis. Having relieved the bladder, and finding no other urgent symptoms, he directed that he should be sent for if the labor had not terminated by 10 P. M. I saw her at 11 P. M., in consultation with Dr. Jameson, and found her in a state of exhaustion, with quick, feeble pulse, irritable stomach, and the external parts tender, hot, and dry. Under these circumstances, and as the head had remained stationary upwards of nineteen hours, we decided at once to terminate the labor. I could not detect the foetal heart; but as the placental soufflet was evident, and the pupil on duty assuring me that he had heard the foetal tic a short time previous, I was reluctant to resort to the perforator. I succeeded with some difficulty in introducing the blades of Churchill's forceps obliquely, and, after considerable effort, extracted a large male foetus. She made a good recovery in all points, with the exception of suffering from incontinence of urine, which set in about the fifth day after the operation. The formation of a recto-vaginal fistula was ascertained; but as her general health was impaired, she was directed to try change of air, and return to the hospital after two or three weeks' sojourn in the country.

She was readmitted on the 1st of July, and, on examination, a transverse oval aperture was ascertained immediately above the neck of the bladder, through the vesico-vaginal septum; it measured eight lines in its long diameter, and the finger could be readily passed into the cavity of the bladder. The narrowed condition of the vagina, combined with the soreness resulting from the extensive excoriation, made the examination very difficult. The patient complained that the moment she turned in the bed, or assumed the erect posture, the urine flowed away. She said her life was miserable, that she was offensive to others, and unable to earn her subsistence, and would gladly submit to any operation. Various attempts were made to relieve the extreme sensibility of the parts. Carbonic acid gas (as suggested by Dr. Simpson) was injected, and the vapor of chloroform, through Dr. Hardy's chloroform bellows; but instead of diminishing the soreness, such aggravated suffering, with increased contraction of vagina, was induced, that I was compelled to postpone the operation from the 15th to the 25th. Two days prior to that date I cautiously dilated the vagina with plugs of prepared sponge, smeared with extract of belladonna, which proved an admirable anæsthetic.

Having previously cleared out the bowels, I secured her in the position for lithotomy, and proceeded to operate, in the presence of Drs. Montgomery, M'Clintock, Churchill, Ringland, and Mr. Maurice Collis. It had been intended to use chloroform; but after a few inspirations the sudden irregularity

of the heart's action compelled us to desist. Two dilators were first introduced, and pressed obliquely upwards and outwards. The third pressing down on the recto-vaginal septum enabled me to get a good view of the fistula. A full-sized catheter passed through the urethra, and pressed downwards and forwards, kept firm the posterior margin of the aperture, and prevented the bladder from coming in contact with the knife. With a long-handled, double-edged knife, I carefully split the vesico-vaginal septum at the posterior lip to the extent of three lines, carrying the knife completely around the commissures, and keeping close to the vesical surface. I then did the same to the lower and anterior margin, but with greater difficulty, as its aspect was turned from me. The constant welling of blood and urine compelled me to work very slowly. I then syringed with cold water, which in some degree repressed the bleeding, and with the ordinary fixed needle, as used in a similar operation by Mr. M. Collis, I inserted four ligatures of strong brown thread at intervals of three lines, carefully avoiding penetrating the vesical mucous membrane. I secured the ligatures over two bars of gutta serena, and was most cautious not to draw the thread too tight, thus preventing the risk of strangulation of the margins inclosed between the quills. The operation lasted about half an hour.

She was then placed in bed on her face, her body well supported by pillows, a long gum-elastic catheter was passed and secured, and one grain of opium was directed to be given every third hour.

On the fourth day I examined, and was gratified to find the margins of the wound in perfect apposition, and no suppuration. I divided the ligatures, but did not remove them until the following day, that is, the fifth from the operation. The union was complete, but I did not venture to withdraw the catheter or act on the bowels until the eighth, when they were gently moved by a mixture of castor oil and tincture of rhubarb.

On the eighteenth day she was walking about the ward. She said she was able to retain her urine, and her only inconvenience was a tendency to micturate frequently. This gradually subsided, and on the 14th of August she was discharged in perfect health, and is at present in a good situation, and, as she declared to me, as well as ever she was in all her life.

"This mode of operating," says Dr. Sawyer, "appears to me to possess the following advantages:—

- "1. Facility of execution.
- "2. Probability of speedy union by adhesive inflammation.
- "3. The prominence of the vesical flaps form an admirable barrier to the urine insinuating itself.
- "4. Comparative freedom from hemorrhage.
- "5. If it does not succeed, there will be no increase of the fistulous aperture, as after other plans."

ART. 141.—*Extirpation of both Ovaries.* By Dr. POTTER.

(*American Quarterly Journal of Med. Science*, Oct., 1857.)

This case is reported by Dr. Tinkham, of Geneva, New York County.

CASE.—The patient was a married lady, æt. 25. She first discovered a small tumor in abdomen about two years ago; from that time to the present it has increased gradually, but within the last two months more rapidly than before. During this time her general health has been good, she has been under no medical treatment, nor has the tumor been tapped. When she consulted Dr. Potter the tumor was of immense size, distending the walls of the abdomen from the pubis to the sternum. He decided, from its appearance and previous history, that it was an enlarged ovarium, and ordered it to be tapped. This was done on the same day, and nine pounds of a dark colored, pasty-looking fluid drawn off. Having now ascertained beyond a doubt the character of the tumor, he recommended an immediate operation as affording the only chance for recovery. This, having been decided on by the patient and friends, was performed in the following manner by Dr. Potter, assisted by Drs. Peck, Bolton, Graves, Whitbeck, Hawley, Frost, and myself. The room was heated to a temperature of about 80°, the patient placed on a table of convenient height

in the centre of the room, and chloroform administered. An incision was then made extending from the umbilicus to the symphysis pubis along the linea alba, the tissues were carefully dissected until the peritoneum was reached, some small arteries were ligated, the blood sponged away, and the peritoneum opened, when the tumor presented itself. It was slightly adherent to the omentum, but was easily separated from it by the fingers and handle of the scalpel. A trocar was introduced into the lower part of the tumor, and a large quantity of fluid nearly the color of water drawn off. As this did not empty the tumor, it was evident there were two cavities. The trocar being introduced into the other cavity, about the same amount of fluid was evacuated as before, but of a darker color and thicker. As the size of the tumor was still such as to prevent its being lifted from the abdomen, the incision was extended above the umbilicus about two inches; the tumor was then easily lifted out, and proved to be the right ovarium, the broad ligament of the uterus constituting its pedicle. This pedicle was cut close by the tumor, was split longitudinally into three parts, and a strong ligature applied firmly to each part. This tumor with its contents weighed twenty-two pounds. The left ovarium was then examined. It was about the size of a large hen's egg, and in a diseased condition; it was consequently removed, and a single ligature applied to its pedicle. The protruded intestines were placed back with linen cloths wet in warm water. The lips of the wound were brought together and retained by the common interrupted suture and adhesive straps. The cut extremity of the pedicle was placed as near as possible to the lowest part of the wound, and retained in place by three ligatures, which were fastened together and brought out between the lowest suture and the lower angle of the incision. A strip of lint and a thick cotton compress were laid on the wound, and the corset bandage applied—a bandage well adapted to prevent danger from action of abdominal muscles, and one which could be easily opened. The patient was left in charge of Dr. Whitbeck, attending physician, from whose report of the after-treatment I extract the following portions:—

April 23d.—Four hours after operation, patient felt considerable pain in lower part of abdomen; pulse from 110 to 115. Catheter introduced, and a quantity of urine removed. Prescribed morphia $\frac{1}{4}$ gr.

24th.—Pulse 125; tongue dry; pain in abdomen. Evacuated bladder by means of catheter. Gave small doses of veratrum viride at intervals of four hours, which reduced frequency of pulse from 125 to 98, at or near which point it has remained ever since.

20th.—Patient seized with vomiting in morning. Gave a teaspoonful of brandy in a little water, and afterwards small doses of sul. morphia. Bad symptoms soon subsided. Also gave calomel, $\frac{1}{2}$ grains, every two hours, until ten grains were taken, followed by castor oil and an enema. A free evacuation of the bowels took place during the night.

The rest of the treatment consisted in an occasional dose of morphia and of veratrum viride. The ligatures were all removed by the 25th of May, and the patient discharged.

ART. 142.—*Report on the Enucleation Treatment of Uterine Fibrous Tumors.*
By Mr. JONATHAN HUTCHINSON, Surgeon to the Metropolitan Free Hospital.

(*Medical Times and Gazette*, Aug. 1, 8, and 15, 1857.)

In this report Mr. Hutchinson brings together 39 operations, viz., 18 in which primary enucleation was completed, 6 in which primary enucleation was attempted but not completed, and 15 in which enucleation was effected by inducing gangrene. Of the 18 cases in which primary enucleation was completed, 12 recovered and 6 died; of the 6 in which primary enucleation was attempted but not completed, 4 recovered and 2 died; of the 15 in which enucleation was effected by inducing gangrene, 9 recovered and 6 died.

Primary enucleation.

Were the cases in which enucleation by gangrene has been practised by Professor Simpson added to the above table, that method would compare with

still less advantage with the primary mode than it now does. But the truth is, that the cases in which it was pursued have been, as a rule, much more serious ones than those in the first list. In most the tumor was of a very large size, and either actually embedded in uterine tissue, or at any rate wholly inclosed within the cavity of the womb. Under the head of "primary enucleations," on the other hand, are included several cases in which the tumor was of small size (less than a pear), and several others in which it was already somewhat polypoid in shape, having been partially extruded by the spontaneous contractions of the organ. In these, of course, the danger to life would be but comparatively little. Of cases in which the tumor was of considerable size, intra-parietal, and not protruding either into the uterine cavity or the vagina, and in which, consequently, primary enucleation was undertaken under the most dangerous circumstances, we have 13, and of these 7 ended in recovery, and 6 in death. In the less serious class, those, viz., in which either the tumor was small in size, or already projected considerably, we have 10, out of which only 2 ended fatally, and of these 2, in 1 the tumor, although projecting into the uterine cavity, was so large that its removal had been found impracticable. It is evident, therefore, that in cases in which the two conditions of moderate size and of somewhat depending position are combined, the operation of primary removal by incisions and the use of the finger is attended by very little danger. In those in which the growth is of large size and completely embedded, the chance of recovery after its removal is about equal to the risk of death. In the largest of all, those, for instance, in which the tumor approaches the size of an adult head, no surgeon would ever dream of primary enucleation. Among the causes of death we find peritonitis and inflammation of the pelvic cellular tissue to be by far the most frequent. The hemorrhage, with one or two exceptions, is stated to have been insignificant, and very few appear to have died directly from the shock of the operation. Although in several the operators state that they felt themselves at the time in great risk of lacerating the peritoneal investment of the uterus where spread over the surface of the tumor, yet that accident does not seem to have ever actually occurred. In only one case is it stated that any serious hemorrhage continued after the operation was concluded. Among the cases which recovered, in not a few the patients were very ill indeed, and had narrow escapes of death, either from peritonitis or exhaustion.

Mode of performing the operation.

Whoever has either witnessed its performance, or read the detailed accounts given in some of the French narratives, will have no difficulty in admitting that the enucleation of a large imbedded uterine tumor is an operation which calls into requisition first-rate surgical endowments. In not a few on record it occupied between two and three hours in its performance, and presented such obstacles that the operators were repeatedly on the point of relinquishing their task. The circumstance that these tumors not unfrequently occur to single women, in whom the vagina is narrow, often adds to the difficulties of a case. It is, of course, impossible to give rules which should be applicable to all; but the following memoranda are the result of much investigation, and a careful perusal of all that has been recorded, and will probably be useful to any one who may contemplate its performance for the first time.

1. To have the tumor well depressed into the pelvis by an assistant.
2. To let the first incisions be very free, and pass deeply down into the tumor, thus not only completely dividing its capsule, but facilitating its bisection, should that afterwards be found requisite. This first incision should be made with a scalpel. In most cases it will be found convenient to pass the knife into the uterine cavity, and then turning its edge on to the tumor, cut downwards, and either forwards or backwards, according as the mass may occupy either the anterior or posterior wall. All experience goes to show that no important hemorrhage is to be feared from this incision, and, if directed in the manner indicated, the whole substance of the tumor will intervene between the *knife and the peritoneum*.

3. *The capsule of the tumor having been opened, its separation should next*

be effected by means of the finger, or, if needful, by blunt-pointed curved scissors, the finger being used as a director.

4. The surgeon should be provided for this part of the operation with a set of curved scissors, of various sizes and shapes; one pair at least should be very long indeed. He should also have several pairs of strong and large vulsella, a spatula, a blunt hook, a scoop, and a pair of small midwifery forceps. In several cases the operators appear to have been baffled for want of vulsella of proper size and strength for securely holding the tumor. A strong whipcord ligature, and the various appliances for its use, should be in readiness in case of need.

5. The grand object of the operator, after having separated the tumor from its cyst-wall sufficiently to allow of its lower parts being seized, is to invert the uterus, and drag that viscus, together with the tumor, to the external parts. If this be accomplished, the main difficulty of the operation, that, namely, of working in a confined space, is overcome, and a speedy conclusion may be effected. To do this, a large vulsellum should be carefully planted in the mass, and traction, at first gentle, afterwards vigorous, must be exerted. The axes of the pelvis must, of course, be carefully observed, and the traction must be steady, and not by jerks. As soon as practicable a second vulsellum must be placed above the first, or, if more convenient, the midwifery forceps may be employed.

6. After eversion has been accomplished, an examination with the finger in the rectum should be made, and the relative position of parts having been duly ascertained, the remaining attachments of the tumor must be cautiously separated. The utmost care must be exercised not to cut into an inverted pouch of peritoneum.

7. It is very possible, if the tumor be a large one, that it will be found convenient, before drawing it down, to cut away a portion or portions, and thus diminish its bulk.

8. It is needless to remark that throughout the utmost patience must be exercised, and as much gentleness as is consistent with the requisite degree of force.

9. The operation complete, the everted uterus must be returned; if needful, a sponge plug should be introduced, and a full dose of opium should be given.

10. The use of ice, of the ergot, and of diffusible stimuli, must be resorted to, or not, according as circumstances may require.

After-treatment.

The after-management of these cases must, of course, be conducted on general principles. The writer has, however, to speak in terms of the strongest commendation of the use of turpentine in that form of low inflammation of the pelvic organs, or peritoneum, which not unfrequently follows. It is more especially indicated if rigors have occurred, or if there be symptoms of impending pyæmia. The dose should be from twentyminims to half a drachm. Should there be abdominal tenderness, turpentine stupes may be usefully resorted to. Opium in full doses is another sheet anchor. Perhaps the symptom of restlessness will be most reliable by which to distinguish the cases most needing this drug. There would be no objection to combining its use with that of turpentine; but in cases in which the patient was sinking into helpless, profound exhaustion, and no peculiar degree of restlessness was present, the writer would prefer to rely on turpentine.

Enucleation by inducing gangrene.

This method, if we count those in which primary enucleation was attempted but could not be effected, and include also those believed to have occurred in Dr. Simpson's practice, has been performed in about 27 cases. Out of these there have been about 13 deaths, 10 recoveries, and 4 incomplete cases, in which either it was known that the whole of the tumor had not come away, or there was a return so soon as to render it highly probable that some part had been left behind. Almost all these were cases in which the tumor was of very large size, and in several the operation was undertaken on account of imme-

diate urgency, and after the patient had been reduced to the very lowest state by hemorrhage. Thus it appears probable that of cases of this class somewhat more than one-half may be expected to come safely through the risks incident to the procedure, and rather less than half to result in complete cures. It must be borne in mind that a large majority, indeed almost the whole, were out of all possibility of treatment by the primary method. This plan has the recommendation of being an attempt to imitate nature. Although confessedly very infrequent, yet cases have occurred in which fibrous tumors of the womb have sloughed and been extruded from their bed without the assistance of the surgeon.* A far more common event than this is for them to become pedunculated and assume the polypoid form without wholly losing their connections to the uterus. Although but few facts exist on which to ground a positive opinion, yet, judging from those which have fallen under our notice, we suspect that the fatality of the cases in which spontaneous extrusion has occurred has been little less than that of those in which it has been introduced artificially. The process is one always attended with much constitutional irritation. Although no single operation is required in itself involving much risk, yet with a large sloughing mass in such an important position, with fetid discharges continuing for several weeks, the patient is kept for a considerable time in constant danger of the development of some fatal complication, in the form of pyæmia, peritonitis, or a low type of inflammation of some of the internal viscera. Repeated, if not almost daily, manipulations are needed, and the increased risk of some contagion, either of erysipelas or pyæmia, being thus conveyed by the surgeon, must not be lost sight of, especially if the patient be a hospital inmate. Then, again, it must be borne in mind that the patient has been reduced by long-continued hemorrhages, and that in all probability her vital organs are already, to some extent, in a state of fatty degeneration, a condition which, under the evil influence of profuse suppuration, is not unlikely to become rapidly advanced to a degree incompatible with continuance of function. These kinds of risks render the operation one which will always be attended with much danger, and we think all will admit that it is one which ought never to be performed in an hospital ward. A healthy locality, and privacy in a large well-ventilated room, with the undivided attentions of a nurse, should be regarded as essential conditions. With these, and with most persevering attention to every minutiae in the medical and dietetic management of the patient, it may, perhaps, be reasonably expected that the mortality, even in severe cases, might not exceed a third; but there are certainly no grounds for hoping for a success beyond this.

With regard to the plan of operating, it would appear that the knife possesses great advantages over escharotics. The object is as much as possible to separate the adhesions of the tumor from its cyst, and to thus cut off its vascular supply. Now the effect of the application of escharotics is well known to be to induce the union of subjacent parts, and of this the surgeon not unfrequently avails himself, as in the instance of abscess in the liver, requiring to be opened externally. The dread of hemorrhage from the incisions has been proved by experience to be a chimera, and the prevention of this is, as far as we can see, the only shadow of an advantage which can be claimed for the escharotic plan. By means of a free incision the surgeon may not only divide the capsule thoroughly, but damage the tumor itself, and permit of the finger being employed at the time to accomplish the separation of the cyst-wall to as great an extent as practicable. The usefulness of ergot after a free opening has been made, and the certainty of its action in promoting the expulsion of the tumor, is a point on which all observers agree. Whether or not an attempt should be made to accomplish the enucleation of the sloughing mass by the hand within a week or two of the commencement of the treatment, or whether it should rather be left to disintegrate and come away in fragments,

* For an interesting example of this, see Mr. Grimdale's paper in the "*Liverpool Medico-Chirurgical Journal*," No. I. We do not know where to turn for the record of an instance of spontaneous piecemeal disintegration, such as occurs in the cases surgically treated. One such, however, happened in St. Bartholomew's a few years ago, the patient being one of the ward nurses, and its particulars have been mentioned to us in conversation by Mr. Paget. The woman recovered, but Dr. West says that subsequently another tumor protruded, as a polypus, was removed by ligature, and that death from pyæmia followed.

is a point which the circumstances of the particular case must decide. Dr. Atlee's experience seems to be that the tumor may be left to disintegrate with very good confidence (provided it have been well exposed and freely cut into) that such result will ensue; and some facts which have fallen under the writer's observation lead him to give full credence to this *a priori* improbable statement. The vitality of many uterine fibroids appears to be very small indeed, and comparatively little interference will often suffice to ensure their death, whilst the manner in which large tumors, when they have once become sloughy, will as it were melt away, is quite astonishing.

What events may be expected when fibrous tumors are not interfered with?

The determination of the feasibility of the enucleation treatment does not rest solely on an accurate estimate of the amount of risk which inevitably attends it. We must consider the other alternatives which are offered us. And here, in truth, is by far the greatest difficulty of the question. If these tumors were always fatal within a short space of time, no one would hesitate to recommend a procedure that offers a fair chance of a complete cure in a proportion of about two thirds. But we know, on the other hand, that they are of by no means infrequent occurrence, and often cause to their possessors exceedingly little inconvenience. In cases, too, in which at one period of life, and that often a protracted one, repeated and exhausting hemorrhages have been induced, we know that not infrequently the tumor will either alter its position, diminish in size, or undergo such modification in its relations that the troublesome symptoms cease to occur, and the patient be restored to health. On this point we will quote only the confirmatory testimony of Lisfranc, which is the more valuable because it is from an ultra-partisan of the operation. After speaking of temporary abatements of symptoms, that surgeon writes: "Il est des personnes plus heureuses: après avoir éprouvé pendant quelques années des douleurs violentes, des pesanteurs fort incommodes, des pertes très-abondantes, beaucoup de troubles dans les fonctions digestives, etc., elles voient ces phénomènes morbides se dissiper; l'embonpoint renaît et même quelquefois la fraîcheur: il existe seulement un peu de fleurs blanches, une légère pesanteur et quelques petites douleurs dans les reins; j'en soigne plusieurs qui portant des matricés énormes et fortement bosselées fournissent depuis dix ou douze ans leur carrière avec les faibles inconvénients que j'ai indiqués; elles semblent promettre de la poursuivre longtemps et peut-être même, à l'aide des moyens hygiéniques et de quelques soins thérapeutiques, comme si l'utérus était à l'état à l'état sain."—"Clin. Chir. de la Pitié," vol. iii. p. 16.

Researches in the pathological theatres show us what these changes are, the effects of which we have noticed in the sick-room. Uterine tumors are often found contracted, and to a large extent ossified, or lodged in the outer part of the uterine parietes, or even pedunculated into the peritoneal cavity. We might also mention, under the possible events which may obviate the necessity of an operation, that spontaneous enucleation may occur; but as we have seen above, that the risks attending this process are probably as great as when the surgeon interferes, it need not claim much attention. Thus, then, there are probably but very few cases in which the conscientious surgeon could say to his patient that the chance of recovery without an operation was hopeless. Still, however, that a number of deaths from these tumors* does occur is undoubted; and in certain cases the amount of reasonable hope is, it will generally be admitted, very small indeed. While, therefore, the indiscriminate adoption of these operations would be exceedingly unwise and wrong, yet we cannot but think that the reverse is the case under conditions

* An instructive and warning case of death from a fibrous tumor, which was in slow process of spontaneous extrusion, is given by Mr. Grimsdale in the paper already referred to. The tumor was found after death to have been in every way well suited for artificial removal. Many such might, doubtless, be collected. We refer to Mr. Grimsdale's paper with much pleasure, on account of the ability and candor which characterize it. Those of our readers who contemplate the performance of operations of this kind will do well to refer to it, as well as to the detailed descriptions which have been given by French surgeons.

of urgency. It happens very fortunately that those tumors which cause serious symptoms are usually the ones most easily accessible. The proximity of the tumor to the mucous membrane of the uterus or vagina, but especially of the uterus, appears to be the main determining cause of hemorrhage, and just in proportion as it bulges inwards is of course its suitability for enucleation. Tumors of very large size have, on the contrary, usually risen well out of the pelvis, and the symptoms attending them are often comparatively insignificant. Two cases, which well illustrate these remarks, are at present under the treatment of the writer. In the first the tumor is apparently about the size of an infant's head, is lodged in the posterior wall of the uterus, and is wedged in the upper part of the pelvis.

The patient, a single woman, æt. 46, formerly enjoyed excellent health, and was in very comfortable circumstances, being a clever hand at the umbrella trade. The tumor has been known to exist for four years, and during that period she has been reduced to a most feeble state, and wholly incapacitated both for her occupation and for any enjoyment of life. She has now the anæmic, blanched aspect of a patient in the last stage of a malignant disease, and was indeed at one period under care at a certain special hospital, where she was told that her disease was cancer. The feet are often cedematous. The tumor can be easily felt above the pubes, but does not rise high. At present a course of the bromide of potassium is being employed, but repeatedly, during the last year, the propriety of attempting enucleation has been considered, and several consultations have been held.

The second case is that of an unmarried woman, æt. 30. The tumor is an enormous one, reaching higher than the umbilicus, and distending the abdomen as if in the last week of pregnancy. Yet here the symptoms are comparatively in abeyance. Menstruation is regular and not too profuse, and attacks of hemorrhage occur only at intervals of several months. She is able to follow her occupation as a dressmaker regularly, and suffers very little inconvenience beyond the weight, &c., of the mass. It would, of course, under such circumstances, be madness to think of attempting any surgical treatment.

Conclusions.

We state the following as conclusions, not in any dogmatic or positive sense of the term; they are the impressions arrived at after much careful study of the subject, but further experience may very likely modify some of them:—

1. That surgical interference with interstitial fibrous tumors of the uterus is always attended with very considerable risk, and ought not to be practised except under circumstances of urgency, or when the position of the growth is peculiarly tempting.

2. That when the tumor is not of very large size, and is already partially extruded, the operation is rendered comparatively devoid of danger, and ought to be performed at once.

3. When the tumor is yet wholly imbedded, and even when of large size, the enucleation treatment is yet warrantable, if the patient's life be threatened by hemorrhage.

4. That primary enucleation, where at all easily practicable, is much preferable to the secondary method.

5. That where the tumor is very large, or where found after the incisions to be firmly united to its capsule, the secondary plan should be preferred.

6. That whichever plan it is intended to adopt, the first incision should, excepting under unusual circumstances, be made from within the cavity of the cervix, and should be as free as possible.

7. That the danger of hemorrhage from this incision is very slight indeed.

8. That as much should be done as practicable at the first operation in the way of freeing the tumor from its cyst. Thus, if the adhesions be found more loose than had been expected, a primary enucleation may be completed where the slower plan had been proposed.

9. That the after-treatment in cases of primary enucleation should consist in warding off the shock by opiates, in sustaining the strength, and in the free use of stimuli and nutritious diet.

10. That in cases of secondary enucleation the ergot of rye should be administered, so as to keep up vigorous uterine action, that the greatest attention should be paid to sustaining the patient's strength, and to the removal of discharge, and shreds of slough, as fast as formed.

11. That in cases of great exhaustion, and threatened pelvic inflammation, the internal use of turpentine is of great value.

12. That in cases of secondary enucleation the surgeon need not be anxious about the removal of the tumor *en masse*, but may entertain a good confidence, that if it have taken on a sloughy state in its lower part that the death and piecemeal disintegration of the whole will follow.

13. That the "recurrent fibroid" tumors slough away yet more readily after interference than the true fibrous ones, although liable to return after a short interval of health.

14. That after a successful enucleation procedure, complete, though gradual, restoration to good health may be expected.

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 143.—*On the Mortality of Infants in Foundling Institutions, and generally as influenced by the absence of breast-milk.* By Dr. ROUTH.

(*Lancet*, Oct. 24, 1857.)

After a few introductory remarks on the paucity of statistics published on this subject, as showing the experience of this country, Dr. Routh states, he is obliged to have recourse to the experience of foreign countries, more especially France. It was true that there might be error introduced by the comparison of data collected in different countries, still, as the vital statistics in most countries were governed by the same laws, the results would still be relatively true. Most writers on foundlings had attributed the mortality to want of breast-milk, whereas there were other causes of mortality far more potent. In papers of this kind, it was usual to speak of three hospitals, Paris, Lyons, and Rheims, besides Parthenay, and a place called X. Now, in Lyons and Parthenay, where the children were suckled at the breast, the mortality was respectively 33.7 and 36 per cent.; whereas in Paris, Rheims, and X, where they were brought up by hand, it was respectively 50.3, 63.9, and 80 per cent. From more extended examples in Europe, it was found the mortality of ordinary foundlings varied from 40 to 91 per cent. M. de Watteville, however, had shown that in France the mortality, where it was highest for foundlings, varied from 50—25, a mean of 26.5; where it was least, from 0 to 5—mean, 3.6 per cent.; and for exposed foundlings, from 83 to 60 where it was highest—mean, 72.4; and where it was least, from 0 to 19.2—mean, 13.4. In other words, the mortality from 1 to 12 years was 78 per cent.; in the first year, 50 per cent.; and the mean duration of life of foundlings was 4 years. Fortunately, of late years, it was on a decrease for all France, having been 14 per cent. in 1838, and 11.30 in 1844. Dr. Routh then instanced particularly the case of Lyons, Rheims, and Paris, showing that the arrangements in Lyons were excellent, and all the children were wet-nursed. In Rheims, besides dry-nursing, they were very badly cared for; whereas in Paris, most were also wet-nursed, but in the two latter cases the nurses were not watched sufficiently closely.

1. In comparing the mortality of such institutions, it is necessary to determine what was the actual mortality out of hospitals amongst children generally. This was mostly neglected. Here, at the outset, there was a remarkable difference between *town* and *country* residents. In Ireland, in civic districts, the mean mortality was per cent. for children under 1, 14.7 civic, 88 rural districts; for children under five years old, 8.1 civic, 4 rural. In England, taking towns and agricultural counties, the proportion of deaths of children under 1 and 5 to all deaths was respectively, for the former age, 23.7 and 49.8; for the latter age, 21 and 34.9. Calculating for foundlings from 1 to 12 in France, the mortality was 72.2 in towns to 11.5 in the country, showing that

foundling hospitals should always be established in the country, a point seldom insisted on.

2. It is said that the mortality of foundlings was greatest in the first year, and usually 50 per cent., but also greatest in the first month of the first year. In Bordeaux, the foundling mortality was 51 per cent.; in Lyons, 37.1 per cent. in the first year; but the mortality was not stated for the first month. Still he deduced the latter from lying-in hospitals and data of accoucheurs, and he found it in both cases 6.1 per cent. In all cases of children in a general population it was so also. In Ireland, the mortality in all children aged 1 month was very high, even in the ordinary population: for all Ireland, civic districts, 31.6; rural, 22.2 per cent.; while in Leinster it was respectively 38.8 and 24.9. In England, the mean mortality of such children, compared to the number of births in the year, was—towns, 4.6; agricultural counties, 4.1 per cent. For the first year it was—Ireland, civic, 14.8; rural, 8.8 per cent. England, towns, 16.7; agricultural counties, 13.9 per cent.

3. Hospital aggregation is a prolific cause of increased mortality. In London alone, for children under 1, the mortality of the population was, from diseases peculiar to children, under 1 year, 11.1 per cent.; under 5, 22.5 per cent.; from all diseases, 16.6 per cent. in the first case, to 34.1 per cent. in the second. He attributed the mortality of children under 1 month, in Ireland, to the filthiness and poverty of Irish cabins, which he described in a quotation from the "Quarterly Review," No. 203, p. 78.

Thus, apart from foundling hospitals, a large share of this mortality could be accounted for.

In specifying some of the causes of mortality peculiar to foundling hospitals—

1. Effect of removal had not the injurious results ascribed to it. This was proved by statistics from France.

2. Season. Spring is most fatal to the children. All deaths being 100, those in spring would be 30.8; winter, 27.7; summer, 27.1; autumn, 14.3. Out of hospitals, in a general population, it was greatest in winter.

3. The abuse of the recumbent position of infants, and want of exercise, was then dwelt upon at length, and M. Hervieux's experience quoted to show the fatal effects of it.

4. Dr. Routh then proceeds to show that want of breast-milk, including cases of privation, cold, premature debility, atrophy, in a general population, could only account for a mortality of 3.6 per cent. per annum in 100 births. That therefore this influence was greatly exaggerated, particularly as M. Benoiston de Chateauneuf had shown that the mere substitution of a hired wet-nurse's for a mother's milk increased the mortality 10.6 per cent.

Dr. Routh concludes by giving the result of his experience, as confirmatory of these views, in two institutions to which he was attached, specially insisting on the mortality from atrophy, diphtheritis, and diarrhoea. The effect of different kinds of diet on mortality he reserves for a second paper.

ART. 144.—On the Abdominal Typhus of Children. By Dr. EDMUND FRIEDRICH, of Dresden.

(*New York Journal of Medicine*, July, 1857.)

The following analysis of Dr. Friedrich's work on "*Der Abdominal Typhus der Kinder*" is from the pen of Dr. E. Noeggerath.

"The author," writes the reviewer, "having been for some years house-physician in the hospital for sick children of Dresden, Saxony, has made a collection of observations relating to typhus fever in children, which were taken partly from personal experience, partly from notes recorded in the day-books of the hospital. It comprises an analysis of 275 cases of typhus fever, occurring during twenty-one years, in a number of 14,868 sick children, which makes 1 out of 54, and speaks sufficiently for the importance of the disease in this age of life.

"In the historical portion of the work, the author points out the fact, that an accurate knowledge of this affection was first derived from German and

French physicians, while there existed, even now, pretty incorrect notions of this disease among English authors, with the exception of Dr. Underwood.

"The following sections comprise very interesting and thoroughly elaborated articles, in regard to statistics, etiology, symptomatology, course, complications, diagnosis, prognosis, and treatment of the disease. In all these particulars, we find the author has fulfilled everything that could be expected of a man of his diligence and skill. In order to give the reader a correct idea of the work, we will endeavor to present a condensed statement of its contents, and the conclusions to which it leads.

"1. Abdominal typhus is by no means a rare disease among children, and is observed among them in a sporadic, as well as in an epidemical form.

"2. It more often attacks male than female children.

"3. The number of fatally ending cases is smaller among children than among grown people; and, again, greater among female than male patients.

"4. In the very first years of life the disease is rare; becomes more frequent from the second year, and reaches its greatest extent from the sixth to the eleventh year. From that it decreases again up to the time of puberty; mortality is greatest from the first to the fourth year.

"5. Boys generally die sooner from the disease than girls, because the fever commonly has a more rapid development among the first.

"6. Abdominal typhus and scarlet fever exclude one another, so that while one of these epidemics is raging, the other disappears, or is seen only in isolated cases.

"7. Typhus epidemics have been observed in small circuits, which seized exclusively upon children, while grown persons were not taken at all, or only in some isolated instances.

"8. The pathological lesions among children are about the same as in grown persons, especially in regard to the enlargement of the spleen. But in children there is very rarely found a deposit of material in the intestinal tube, or genuine typhus ulcers. There are generally found only a few single infiltrated follicles in the glandular plaques, which return to the normal condition, without even leaving a cicatrix, by a resorption of the infiltrated matter, or, more often, by rupture of the follicle opening into the intestinal tube. The rupture and discharge into the intestinal canal is generally observed only to a small extent. Moreover, the formation of ulcers in the mucous membrane of the pharynx, oesophagus, trachea, &c., is of rare occurrence among children.

"9. As decided causes of the disease, we have to consider poverty, uncleanness, improper food, and, above all, impure air, and a damp, dark abode. Moreover, acclimatization, sudden change of the former mode of living, entrance into new conditions of life, have their influence upon the origin of the disease. Still, the most important point is the character of the epidemical constitution. Scrofula seems to be not favorable for the development of typhus fever among children.

"10. The most reliable symptoms are the tumor of the spleen, diarrhoea, meteorismus, and the abdominal gurgle. Fever, accelerated respiration, and catarrh of the bronchial tubes are equally constant symptoms. The scarce and trifling intestinal hemorrhages at the beginning of the disease establish the fact, that the local disease is unaccompanied by a severe congestion. Seldom does the typhus fever of children invade with chills, as is the case in grown people. Delirium and drowsiness are generally present, but not very intense. Roseola is often observed, not so much a papulous eruption, and a later period, sometimes miliaria are seen. The extent of the exanthema does not seem to depend upon the intensity of the disease.

"11. Abdominal typhus generally appears in a milder form among children, its duration being from sixteen days to several months.

"12. Its complications with parotitis, phlebitis, and hemorrhages, are far more seldom observed in children than in grown persons. During recovery, measles, smallpox, and other eruptions may be developed.

"13. The most common termination is recovery, which generally proceeds very fast, while tuberculous, gangrene, intestinal ulceration, abscess, or atrophy of the mesenteric glands are of rare occurrence among children. *Tuber-*

cles, if present in small quantities, seem to be liable to calcination during typhus fever.

"14. The most important points in diagnosis are the enlargement of the spleen, the roseola, the increased temperature of the skin, the diarrhoea, the meteorismus, the painfulness about the abdomen, the coecal gurgle, the bronchial catarrh, the symptoms of cerebral disturbance, and the prevailing epidemic.

"15. The following symptoms are of the greatest importance in prognosis, which is generally favorable: the character of the epidemic, the external conditions of life, age, and sex. Complications and remaining diseases prove often more dangerous than the fever itself in its greatest intensity.

"16. Experience has taught that the expectant treatment is the best that can be pursued. It is impossible to cut short typhus fever; still, medium-sized doses of calomel, given from the fifth to the eighth day of the disease, have a decidedly good effect upon its course. Under all circumstances, we must spare the strength of the children, and let them have nutritious food in good season."

ART. 145.—*On the Insanity of Children.* By Dr. BRIERRE DE BOISMONT.

(*The Journal of Psychol. Medicine*, Oct., 1857.)

"There have recently been published in France two theses—one upon mental affections in children;* the other upon insanity at the epoch of puberty.† It seemed necessary to inquire the limit of the age of the individuals who formed the subjects of these two essays, because until then we had believed mental alienation to be very rare in childhood. Amongst the seventeen cases observed by the authors, the youngest were fourteen years of age, and the others varied from fifteen to twenty-two. The critic might reasonably object that the designation of children was scarcely applicable to the greater part of these patients. We are aware, however, that Haslem, Greeding, Frank, Burrows, Spurzheim, Friedreich, Esquirol, and Guislain have related cases of insanity amongst children of less than eleven years. We owe to Dr. Marc, physician to Louis Philippe, the very curious observation of a young girl, aged eight years, who openly avowed her intention to kill her mother, father, and grandmother. Two motives seemed to influence her in this resolution—the desire to *possess their property*, and to amuse herself with little boys and men. She was morose, taciturn, and answered very laconically to any questions addressed to her. In the country she abandoned herself early to solitary vice, without her health appearing to suffer; but on her return to the town, she began to fall away rapidly. It was some time before the cause of this emaciation was discovered: on surprip enfin ses habitudes onaniques; elle les confessa cyniquement, en disant qu'elle regrettait de ne pouvoir y substituer le commerce des petits garçons.‡

"In the course of a practice of more than thirty years, we have only observed three cases of mental derangement in children. The first relates to a pretty and intelligent little girl of seven years of age. Her mother was under treatment for a mental affection, and it was observed shortly that the child became irritable and capricious, and gave way to the most violent fits of passion, during which she would break and destroy everything which came to hand. Soon afterwards she became subject to attacks of ecstasy, in the course of which her features had a seraphic expression, and her eyes remained fixed upon the sky for a great length of time: she would cry aloud with a voice vibrating with emotion, 'I see the angels; they are coming to me.' When the crisis was past, she was very excitable for some time, but gradually became tranquil, and could answer rationally the questions put to her.

"The second case was that of a boy, aged six, extremely difficult to manage, and of an irritability which had become, during the past four months, insupportable. When he was placed under my care, he could not remain in one place, was continually mounting upon the chairs, tables, and window-seats,

* Paulmier. Paris, 1856.

† Rousseau. Paris, 1857.

‡ Marc, "*De la Folie*," tom. i. p. 96.

and rolling in the dust; he ate gluttonously and irregularly. He would listen to nothing, but got into a rage if any one wished to control him. He perpetually escaped from surveillance, and was never found again until he had accomplished some mischief. On account of his violence, which rendered some serious result not improbable, it was necessary to impose mechanical restraint upon him. When he found himself thus disabled, he became enraged, and menaced us in a manner most extraordinary for a child of that age: 'As soon as I am at liberty, I will set fire to the house, and if I can find a pointed knife, I will stab you to the heart; I should rejoice to see your blood flow, and to kill you.' In his father's house he had often used similar language; and it was the fear on the part of his parents that he would at some time carry his threats into execution, that had led them to the resolution of placing him in our institution. We found it would be dangerous to keep such a patient; he therefore returned home, and we lost sight of him.

"The third example of this kind was observed by us in the asylum of St. Athanasius, founded by the much regretted Dr. Follet. When we visited this model establishment, the directing physician, M. Baume, showed us a boy of ten years of age, who, notwithstanding a defect of the right eye, had a lively, bold, intelligent aspect; he was properly developed for that age. We were informed that he had an excellent memory, and learned his lessons very easily. He had just made his first communion, and it was hoped that this religious act would have a favorable influence upon his shocking propensities. From his earliest years he had manifested the very worst instincts; he stole everything to which he took any fancy; he was the terror of his playfellows, whom he pinched, struck and abused in every way; he obeyed no orders, and wandered about incessantly. His parents had never been affected with mental disturbance, and he was an only child, so that jealousy could have no share in producing these results. His instincts became more and more perverted, and as he uttered threats perpetually, would strike and try to wound, and talked continually of killing some one, his mother determined to bring him to the asylum. There he became the terror and scourge of the patients, always pinching, biting, and striking. His victims were especially the imbecile and idiots. This kind of instinct exists also amongst these classes particularly. Last year, visiting an asylum, I saw, in the section devoted to idiots, one of them, who thought he was unobserved, steal round to give a kick to one of his companions who had in no way molested him.

"When the boy was in our presence, he seemed at first a little abashed, and spoke only in monosyllables. But speaking to him with much precaution, and attributing his misdeeds to his malady, he became more communicative, and answered our questions. He avowed quietly all that he had done; he said, 'I have no pleasure except in doing mischief. I should like to shed your blood. When I pushed against my mother, it was to throw her down.' On different occasions he manifested a desire to stab her with a knife to kill her. It is naturally, and without anger, that he does wrong. He knows well that it is wrong, but he feels no regret; he gives a blow as another child would give a piece of bread to a beggar. He spoke to us without reserve. One would have thought that the conversation was upon the most indifferent matters; the eyes had no particular expression. He retains the remembrance of what he supposes to be an injury, or of an unpremeditated wrong, and avenges it on the first opportunity. Religion has made the first attempt at cure; a prolonged moral treatment may second it. It will be interesting to know what will result from this innate tendency to evil, against which chastisement would assuredly be inefficacious, independent of its injustice; and which would certainly, to any enlightened mind, be a surety of non-responsibility in the commission of any criminal act.

"These three cases establish clearly the fact that mental derangements may occur in childhood; but they constitute rather perversions of instinct, of sentiment, and of the moral faculties, than well-defined types of mania or monomania. This tendency, moreover, is in relation with the psychological dispositions of this period of life. For ninety-nine years there have been received at the Salpêtrière and Bicêtre, in the department of epileptics, idiots, and imbe-

oiles, young children, who, examined carefully, do not really belong to this division, but are liars and thieves; immodest and vicious in every form. M. Schnepf, in his thesis on 'Aberrations of Sentiment,' (1855), has related nine cases, among which are found children of seven years and nine years and a half.

"Sundry authors, and amongst others, MM. Parchappe, Aubanel, Chore, Delasiauve, and Paulmier, have classed mania amongst those affections to which children may be liable. The cases which we have seen, characterized by great agitation, have not appeared to us to constitute true mania; and the communication made to the Medico-Psychological Society by Dr. Delasiauve refers chiefly to epileptic children, whose maniacal attacks were complicated by a kind of ecstasy. It is, however, necessary to recognize that a form of mania may exist in children. Lastly, in his 'Report of the Devon Asylum for 1856,' Dr. Bucknill, after having divided insanity, according to the symptoms, into mania and melancholy, relates, in the first category, the case of a child, twelve years of age, who was brought to the asylum for having attempted suicide by drowning and strangulation. He was affected then with chorea. Around his neck was distinctly visible the mark produced by the cord. He cried incessantly, 'I wish to die—I wish to die.' He struck his head against the wall and tried to suffocate himself by pressing his fist against his throat. He bit and struck at every one who came near him. He was put in the padded room, and had baths and medicines to procure sleep. In forty-eight hours he was quieter. Three days after, the remedies having been discontinued, the symptoms returned with all their first violence, but yielded completely to hot baths, morphia, and cold affusion to the head.

"The preceding observations leave no doubt as to the disorders of mind which may affect children. As yet the subject is new, and has not generally engaged attention; and it is easily to be understood how it happens that there is no large collection of such cases. But the subject being opened out, it is not to be doubted that shortly more extended and complete communications will furnish to education, to medicine, and to philosophy, new materials and useful data, which will rectify many errors. We may consult on this subject a very interesting essay by Dr. Bush.* The author divides the cases which he has observed into two series; 1st, those children who present excessive irritability of the nervous system, with a general lack of mental and bodily vigor; and 2d, those who, with the same lack of vigor, present diminished irritability. After examining with the greatest care the causes of the physical, mental, and moral inequality of children, he shows forth the general standard of education to which all these varieties of intelligence are subjected. He shows then that before punishing idleness, inattention, obstinacy, perversity, but especially moral derelictions, as lying, theft, &c., we should most carefully examine whether these dispositions are due to education or to the defective nature of the child. Punishment, in this case, would be only an aggravation of the evil, whilst the best corrective would be modification or change of education. No doubt the custom of considering children as mere similar units of society makes a great proportion of them entirely ignorant, where it does not morally degrade them. But how few parents would be able to have private instructors? Their assemblage in communities is the most practicable resource; but it will never be advantageous to the country at large, until the heads of colleges and similar institutions devote themselves less to the making of money, and more to the careful consideration of the faculties of their pupils, with the view of leading each in his peculiar vocation."

* On "Juvenile Delinquency," p. 57; "Journ.," 1849, p. 428.

REPORTS
ON THE
PROGRESS OF THE MEDICAL SCIENCES.

July—December, 1857.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON PRACTICAL MEDICINE, ETC.

Note to the Lecture on Bloodletting, formerly published. By THOMAS WATSON, M.D., Consulting Physician to King's College Hospital. ("Edin. Med. Journal," June, 1857.)

Reply to the previous Note of Dr. Watson. By J. HUGHES BENNETT, M.D., Professor of the Institutes of Medicine in the University of Edinburgh. ("Edin. Med. Journal," June, 1857.)

THE controversy which has now been going on for some time (v. "Abstract," XXV. p. 253), between Dr. Alison and Professor Bennett and others, upon the change which has taken place in the treatment of inflammation, has elicited an opinion from no less a person than Dr. Watson; and this opinion, with the rejoinder from Professor Bennett, we now propose to give without any further comment of our own. Dr. Watson, we may premise, still adheres, from conviction, to the principles which he has formerly taught. He says:—

"1. Although Dr. Hughes Bennett intends his observations to have a general application, he chooses inflammation of the lungs for the main topic and illustration of his argument; and he begins by setting aside as worthless all so-called experience of that disorder, of an earlier date than the invention of auscultation. Cullen and Gregory, and writers yet older than they, were not able (he says) to recognize pneumonia in the living body, and therefore cannot be said to have had any real or certain knowledge of its behavior under remedies.

"Now, it may be granted that neither Cullen nor Gregory could assure himself, as any student of the second year might now do, of the changes wrought by pneumonia in the living lung; but they certainly were competent to ascertain, beyond all doubt, that inflammation was going on somewhere within the chest. Against such inflammation they learned, by watching, the efficacy of early venesection. They obtained most trustworthy evidence and experience of its power to control inflammation; which is precisely what Dr. Bennett contests. That they might not be certain as to the exact seat of the internal inflammation, is nothing to the purpose. This part of Dr. Bennett's argument flies wide therefore of its mark.

"2. I venture to call in question the accuracy of Dr. Bennett's positions, that inflammations can never be cut short; but, whether they are to end favorably or unfavorably, must and always will run through a certain course: that it is the physician's proper business to promote rather than to impede this their natural progress; that the formation of pus-corpuscles is essential to the elimination of the products of inflammation from the body. I believe, on the contrary, that inflammation may sometimes be extinguished in its very infancy, before any of its customary products have occurred; and that, even after they have some of them occurred, the intensity of acute inflammation may be abated, and its extension stayed, by the judicious use of the antiphlogistic regimen and remedies. I cannot think, as Dr. Bennett seems to think, that every step after the very first step in the inflammatory process is to be regarded as nature's mode, and the only mode, of bringing that process to a satisfactory termination.

"3. In affirming it to be impossible that bleeding from the arm can directly

affect the coagulated exudations of inflammation, Dr. Bennett combats a doctrine which, so far as I am aware, has no defenders. Who treats, knowingly, the extravasated products of inflammation by general bleeding? The primary object of that measure is to anticipate, and if it may be, to prevent such products. Still, in my judgment, it is not improbable that the abstraction of blood may sometimes promote the reabsorption of the matters exuded. Whatever may be the ultimate beneficial result (and I believe that it will be immense) of that scrutiny, chemical and microscopical, into morbid textures which modern science has achieved, the information thus obtained is not yet complete or ripe enough to warrant any exclusive reliance upon it as a guide to treatment; more especially when its teaching appears to clash with the prior teaching, for hundreds of years together, of well-conducted though empirical observation.

"4. And see what experience has really attained in this matter. Facts, which no one can gainsay, attest the immediate influence of bloodletting in incipient inflammation. The emergence from coma, or from delirium, while the blood is still flowing, in intra-cranial inflammations—the sudden relief of pain, tightness of the chest and restricted breathing in pneumonia itself, its presence being further assured by the pneumonic crackling and the pneumonic sputa—are familiar facts of that kind. Dr. Alison has testified to the unmistakable benefit experienced by himself under the employment of the lancet in a sharp attack of pleurisy; and I have no doubt whatever that my own life was once rescued by bleeding in inflammation of the bowels; so prompt, unequivocal, and decided was the amendment which followed that remedy. Facts such as these being abundant on all sides, and undeniable, to allege that the patients were ultimately the worse for the treatment pursued—that they would have recovered sooner, or more thoroughly, had no bleeding been instituted—is a mere begging of the question at issue, which we, of the older belief, may fairly decline to grant.

"5. That which at first sight appears to be the strongest point in Dr. Bennett's argument, is his appeal to the evidence of statistics. But the 'numerical method,' as it is called, though of excellent use in many researches, and indispensable to the acquirement of exact information of some kinds, has no conclusiveness at all, but, on the contrary, may easily mislead, when it is applied to the *treatment* of separate cases of disease. To be guided by statistical results here, is to adopt the irrational and dangerous rule of prescribing after the *name* of a disorder; whereas each case requires its special study, speaks its proper language, furnishes its peculiar indications, and reads its own lesson. Take the very disorder considered by Dr. Bennett—take pneumonia, as certified to exist by its auscultatory signals. Surely no sane person professes to treat all instances of it in the same manner. The great majority of such cases are, by common consent, treated without venesection, and probably much as Dr. Bennett would himself treat them; some are properly treated by stimulants even; some by opium; some with mere 'expectation.' The exceeding value of statistical returns in determining the *causes* of disease has been admirably set forth by Dr. Alison; but, for directing the treatment of individual cases, it is far more profitable (as some one has well expressed it) to *watch* than to *count*. To use or to withhold a given remedy simply because it is found, by numerical calculation, that in cases nominally the same, recoveries have been more frequent when that remedy was employed on the one hand or omitted on the other, would be to sacrifice the plain and perhaps pressing indications of a particular case, to the statistical averages of diseases having merely a common denomination. To repeat what I have said elsewhere—we do not necessarily take the same symptoms as indications of treatment, which we trust to as signs of disease. We treat, indeed, not the so-called disease, but its accidents; the vital manifestations which proclaim its character and intensity, foreshow its tendencies, and illustrate its course.

"6. With respect to pneumonia, it is very true that there is much less bleeding practised now than formerly; partly, I do entirely believe, from a change in those vital manifestations to which allusion has just been made; partly because we more easily and surely estimate the extent, conditions, and progress of the inflammation. Or rather, perhaps, it should be said (setting aside what

may be due to the mere fashion of the day), there is *apparently* less bleeding, because many more instances of disease are brought within the category of pneumonia, by the testimony of the ear. We grant that bleeding, like all other potent remedies, is powerful for evil as well as for good; but we advocate its prudent use, not its careless adoption, or its routine abuse. We believe that the plan which would dispense with bloodletting in all cases of acute inflammation, is too simple and facile to be the right or a safe plan.

"7. It is objected to venesection, that 'it deteriorates the blood, rendering it poorer in corpuscles and richer in water,' and therefore (presumably) less fit for the purpose of repair. But it should be remembered that the blood is liable to deterioration of a more pernicious kind by the presence and persistence of acute inflammation. Herein consists a marked difference between fevers and common inflammation occurring in a previously healthy person. In fevers, the blood is primarily diseased. In inflammation, there is reason to believe that it is the very part inflamed which gradually spreads infection through the general mass of the blood; and this contamination we prevent or limit, if we can arrest the inflammation.

"8. After all, Dr. Bennett admits that, though large and repeated blood-lettings are opposed to a correct pathology, benefit may nevertheless accrue from a limited abstraction of blood, when there is no great debility. He even thinks it probable (speaking, however, of what he infers to have been obstruction to the circulation rather than inflammation) that the 'inexpressible relief' derived, in some cases of 'great dyspnoea and pain,' from the loss of only a few ounces of blood, may have arisen from its 'diminishing the tension of the whole vascular system.' In these admissions I apprehend that the whole matter in dispute is virtually conceded. For who shall say, in a given case of severe inflammation, what is a large, what a small bleeding? These are relative and even convertible terms. So that the Professor here appears to me to come back to the ancient ways, and the accredited practice; which is, neither to exclude bleeding, nor to bleed in excess of the present necessity. So to bleed as to secure the advantages of the remedy, and to avoid its disadvantages, is the precept, I believe, of all teachers.

"9. I have no room to discuss the question, answered in the negative by Dr. Bennett, whether febrile inflammatory diseases may change their type. He takes pains to show that the process of inflammation, in its several steps, its products, and its local effects, are at all times the same. What he has not shown is, that the human constitution is incapable, from influences to us unknown, of undergoing alterations, in respect to the manner in which it is affected by inflammation, and by the reputed remedies of inflammation. For my own part, I am firmly persuaded, by my own observation, and by the records of medicine, that there are waves of time through which the sthenic and the asthenic characters of disease prevail in succession, and that we are at present living amid one of its adynamic phases."

To these observations Professor Bennett alludes in the order in which they occur. He says:—

"1. I argue against the general opinions of Cullen and Gregory, as to large bleeding in internal inflammations, not only because they were incapable of separating pneumonia from other inflammations of the chest, but because, so far as we are now capable of determining, their practice was a fatal one; because those who have imitated it, and carefully examined the results, have found it to be so (Louis, Dietl); and because all those who have abandoned it declare that not only do their cases get well as soon, but sooner, when blood-letting is not practised. Now, I can find no facts or arguments to controvert this position among the statements of my opponents.

"2. I am aware that the general *belief* is, as Dr. Watson states, that inflammation may be cut short or delayed by antiphlogistic regimen and remedies; but every well observed fact is opposed to such a belief, and all those who have carefully studied pneumonia in reference to this point, are satisfied that bleeding lengthens rather than shortens the progress of the case. (Louis, Grisolle, the Vienna physicians.)

"3. 'Who,' says Dr. Watson, 'treats, knowingly, the extravasated products

of inflammation by general bleeding?' The word 'knowingly' here is all-important, because the fact is, Cullen, Gregory, and all those who followed them, did bleed largely after exudation had occurred. Hence very probably the large mortality, and hence the difference between the first and second series of Louis' cases. But our improved knowledge of diagnosis having taught us how to detect such exudation, we now do not bleed under circumstances where our predecessors did. This is why I contend that the change of treatment is owing to an improved diagnosis rather than to a change of type.

"The statement, that our knowledge of pathology, owing to recent chemical and microscopical investigation, is not yet complete, or ripe enough to warrant any exclusive reliance upon it as a guide to treatment, requires comment. No one has ever contended for the exclusiveness of this or any other mode of investigation. But that pathology, as a science, has of late years made rapid strides in advance, cannot be denied; and if so, why should it not do in modern times what it has done in all times past, viz., suggest to our minds the reasonableness or unreasonableness of particular modes of practice? It is in vain telling us to adhere to the routine of our forefathers, when the principles which guided them are proved to be erroneous. But when, in addition to change in theory, actual experience demonstrates that we are right—when modern pathology and modern practice harmonize with and support one another, then it appears to me that the time *has* arrived for demonstrating the errors of former teaching, as well as of past empirical observations.

"4. In this paragraph, Dr. Watson refers to the immediate relief of symptoms, produced by bloodletting as undeniable facts. This is granted. But my argument is, that relief of symptoms is no proof that the disease is benefited. Do we influence a large thoracic aneurism, or cure it, because the symptoms is occasions are undoubtedly diminished by bloodletting? Having then, from the first, indicated the great distinction between the treatment of symptoms and the treatment of lesions, it is certainly not I who beg the question at issue.

"5. No one is more thoroughly acquainted with the fallacies inherent in medical statistics than I am, and no one has more constantly pointed these out to others. But the error of some statistics resides more in the jumbling together of different experiences, and of the cases of various practitioners, than in an endeavor thereby to arrive at the results of a particular practice in the hands of any one well-qualified observer. Surely the statistics of Louis on phthisis, and on the effects of bleeding in pneumonia, are trustworthy, as are those of Grisolle and Dietl. And I venture to affirm that my own statistics of 65 cases of pneumonia will challenge the strictest inquiry into their accuracy. Then no one, so far as I am aware, uses or withholds any given remedy merely *because* of numerical calculations, but, having seen occasion to try this or that practice, he determines its good or bad effects by counting as well as watching. Above all, he should watch and report on those who die, as well as on those who recover under a particular treatment, if he wish to ascertain its real value; and what is this but counting cases? Is such observation not better than arraying opinion against opinion, placing the vague statements of senior in opposition to those of junior practitioner, or contrasting the scholastic views of London and Edinburgh, with those of Paris and Vienna? Thus, when it is shown that of 65 cases of pneumonia which entered my clinical wards only 1 in 21½ died, but that, of 75 similar cases which entered the wards of La Charité under M. Louis, 1 in 3½ died, then I think it reasonable to conclude, that, as in my cases the vital processes were furthered and supported, whereas in those of M. Louis they were diminished or subdued, the great mortality of 1 in 3 individuals affected was owing to the treatment, and that such is a legitimate application of statistics. When, moreover, I ascertain that this conclusion is borne out by the experience of other hospital physicians, then the conviction is forced on my mind, that the number of deaths from pneumonia is lessened in modern times in consequence of our change of practice, rather than of a change of type in the disease.

"6. This paragraph still further affirms what I previously maintained, that

our practice has been influenced by an advanced diagnosis. The change in vital manifestations is again asserted, but no new arguments are advanced.

"7. I agree with Dr. Watson that the essential difference between fevers and inflammations is, that in the former the blood is primarily, and in the latter it is secondarily, affected. I further agree, that, if we could arrest the inflammation, we might prevent or limit the blood disease. The possibility of doing this is the question in dispute, and the argument is in no way affected by the statements in this paragraph.

"8. I cannot agree with Dr. Watson that the whole matter in dispute is virtually conceded, because I admit that symptoms are relieved by bloodletting. A rigorous antiphlogistic treatment was formerly put in force with a view of cutting short the disease. Now, this I contend is not done; but, on the contrary, the real disorder is prolonged, and rendered proportionally more fatal by that practice. On the other hand, small bleedings which do not lower the vital strength, are sufficient to relieve urgent symptoms: it being recognized that the lesion otherwise is to be assisted in its natural progress. Surely this is a complete revolution in the principles, as well as in the practice, referable to internal inflammations. But that we should 'so bleed as to secure the advantages of the remedy, and avoid its disadvantages,' is a happy practical conclusion in which all parties must concur.

"9. I humbly think it is not for me to show that the human constitution is incapable of undergoing alterations. The *onus probandi* must be laid upon those who assert that any such change is sufficient to account for the remarkable modifications which have taken place in medical practice during the last twenty years. That there may be sthenic and asthenic waves of time, I will not venture to deny, although I may fairly assert that, as yet, we have no proofs of their existence. If the metaphor be just, I should regard the sthenic wave, which has been rolling on for 'hundreds of years together' (see Dr. Watson's third paragraph), as having been a most mischievous one, and should congratulate mankind on its being now happily broken and spent. But such would, in my opinion, be a faulty figure of speech, and in no way serve to explain the fact. On the other hand, it is incontestable that our knowledge of morbid lesions is greatly advanced, and our means of detecting them in the living body much improved. Hence, it seems to me, we are taught by diagnosis the inutility of now directly treating many diseases that formerly we hoped to benefit; and have further learnt from pathology, that, instead of lowering, it is only by upholding the vital processes, that we can indirectly modify and overcome even textural alterations themselves."

Remarks upon some of the specimens of Diseases of the Bones contained in the Museum of Guy's Hospital, especially those styled osteosarcoma and myeloid, with reference to the question of malignancy. By SAMUEL WILKS, M. D., Assistant-Physician to Guy's Hospital. ("Guy's Hospital Reports," 3d series, vol. iii. 1857.)

In this paper, Dr. Wilks gives an account of some of the specimens in Guy's Hospital Museum, to which accurate histories are attached, and shows that several of the so-called innocent osteosarcomatous diseases have returned in the internal organs. He shows, indeed, and that very conclusively, that the line of demarcation between malignant and non-malignant diseases is far less defined than it is ordinarily supposed to be, and his comments upon the question of malignancy are most philosophical and practical.

"The microscope," he says, "has, we believe, ever since its general employment, tended to show that there is no more distinct line to be drawn between cancerous and non-cancerous growths than between malignant and non-malignant disease, and that there are links between the most extreme kinds of innocent and destructive growths, as between all other objects in created nature. Ordinary experience is now confirming this statement, and asking why a surgeon should call a cancerous tumor of the breast malignant, when the subject of it is in good health, and has possessed it, perhaps, for a score of years; or why tumors composed of simple fibre, cartilage, or bone, should be called

otherwise than malignant when they rapidly propagate themselves through the body and destroy the life of the patient. If malignant disease be that which kills its victim by the multiplication of abnormal growths in various parts of the body, then are such as are just mentioned malignant; or if a cancerous tumor be one which ought to follow the same course, but remains stationary and local for years without detriment to the patient, then of necessity very many tumors which to the naked eye or to the microscope are undoubtedly cancerous, are not malignant."

* * * * "Should, however, the microscope at some future time detect a marked difference in a cell, a scale, or a fibre, which should denote its malignant character, we doubt if such will be done in the malignant cartilage or bone; for in all probability these substances are the result of a subsequent formation in a tumor which would have been fibrous, but from the mere accident of the growth being developed in the neighborhood of bone, or in some organ where enchondroma is wont spontaneously to arise.

"If the elements constituting these malignant diseases be not characteristic, the malignity is due to the fact, of their simple production, from some anterior cause, in the system, which may still be called a malignant diathesis; and this, as far as we at present see, appears to consist in a tendency to the production of some elementary tissues in the full-grown body where they should not exist. Thus, the blastema which should form the healthy supply for the nutrition of the various parts of the body produces, instead, a number of elementary cells or nuclei, and these constitute simple or malignant growths according to their degree of development and rate of production. Such a mass of cells grows and destroys the patient, by exhausting the powers or by interfering with some organ with which it is in contact. That a malignant form of disease which produces a tumor composed of cell-growths should be more common, and the tumor grow faster than one composed of fibre, is reasonable from its simpler nature; and, therefore, that such *par excellence* should be called malignant, is not remarkable; nor that if the seeds of it should be carried to any other part, that they would there also rapidly increase. If again, from some cause, whether that be in the diathesis or in the part first excited to action, the new growth should be of a fibrous character, we see with some degree of reason why it should be of slower formation than the true cancer, and why also from the fact of its approaching so nearly in structure those simple inflammatory ones which are called benignant, why this diathesis should present various degrees of malignancy in its result; and so a growth which in one instance is multiplied throughout the body, in another instance merely returns at the spot where it is extirpated. As it is extremely possible that in these two cases the malignancy is only a question of degree, there may also be only another degree between a recurrent fibroid tumor and one which never returns after removal. Again, it does not seem remarkable that a growth on the surface of the body consisting of a mass of epithelial cells, evolved from an epithelial surface, should be generally confined to that part, or remain local; for, though a cell may grow and propagate in any part, or even a fibrous structure do the same, yet an epithelial cell takes root with greater difficulty; and thus, if propagated, it is only by contact, and to the neighboring organs, or even if seen in the viscera, as the lungs, or liver, the cells are abortive, or have only imperfect resemblance to epithelium. Malignant, osseous, or cartilaginous tumors, we believe, depend, as before said, on the same cause which gives rise to cancerous or fibrous tumor, but possess their character from being produced in the neighborhood of bone, and retain the same if repeated throughout the system; and although this origin is not always true of cartilage, yet even this has its beginning where enchondroma is wont to arise.

"This method of regarding cancer must necessarily alter many of our older opinions respecting the disease. It has generally been regarded as a specific morbid element which, having once entered the body, dooms its victim to inevitable destruction, and this often by its mere presence in the system, and without any very great impairment of important organs. This view, however, is seen by experience to be erroneous, although the fact still remains true that the disease is as fatal as ever, and depends upon some latent idiosyncrasy.

Although we may very well believe that there exists a cancerous diathesis, yet that that may destroy the subject in which it is present, without any local manifestation of its presence, is without proof. There has been a kind of loose belief in this opinion, and that cancer is something foreign to the body as much as a poison; and having seized upon its victim, may possibly destroy it before any vital organ is injured by it. So much, indeed, has this been the belief, that if a patient has had a tumor, and its nature uncertain, the aspect or wasted appearance was sufficient to decide its cancerous nature, or if another patient should seem to be wasted without any tangible cause, a latent cancer was suspected. All our individual facts, of which we have great abundance, tend to disprove this, and show that cancer kills either by the drain on the constitution, or by its encroachment on some important organ, most frequently the latter, and then the symptoms have reference to imperfection of function of that organ, rather than to the presence of the cancer. Thus, patients with cancer of the stomach, or of the parts in its neighborhood, by which constant vomiting is set up, are subject to an extreme wasting; but such would be equally the case if such organs were affected by tubercle or simple inflammatory affection, which interferes with the chylipoietic function and the general nutrition of the body. This is proved by the marasmus of children, and the not uncommon cases in adults, where a simple inflammatory process, by involving important organs, has produced the most wretched emaciation, although diagnosis of cancer was unquestioned; and, indeed, in the so-called scirrhus pylorus, in its simplest form, the emaciation is extreme, and yet the disease in many cases is far from being proved to have a cancerous origin. On the other hand, patients who die with cancer in less vital organs, do not necessarily waste, nor if the disease attacks external parts; for in such often a superabundance of fat is found. No surgeon, indeed, looks necessarily for wasting in his cases of cancer of the breast; on the contrary, the subjects of this disease are often seen to be remarkably fat, indeed the post-mortem examination of fat patients who have died of cancer is of almost weekly occurrence."

The successful Treatment of Scarlet Fever: Also Observations on the Pathology and Treatment of Crowing Inspiration in Infants. By P. Hood, Surgeon. (Post 8vo, London, Churchill, 1857, pp. 200.)

Mr. Hood tells us in his preface that he has lost only two patients from scarlet fever in twenty-five years of active practice, and that his friend, Mr. Fuller, of Piccadilly, who has followed a very similar mode of treatment, has not lost a single patient from this complaint during thirty years. He tells us, further, that of the two patients lost under his own treatment, one was moribund when he was called in, and the other had been treated by a different method.

Mr. Hood has nothing new to say upon the disorder itself, and therefore we at once proceed to let him speak about a treatment which has led to such satisfactory results.

"If," he says, "the treatment adopted has for its chief object subduction of the fever, and if it be believed that fever is a thing *sui generis*, having an independent existence—irrespective altogether of that which occasions it, namely, the reception into the system of the scarlatinal poison—then is the practitioner pursuing a phantom, or fighting with a shadow, whilst he leaves the real enemy lurking untouched, or undisturbed, in the veins of the unfortunate victim. If, in the early treatment of the disease, the practitioner is induced by the great heat of skin, and quickening of pulse, to prescribe saline, diaphoretic, and antimonial medicine for the purpose of 'lowering the fever,' he will, probably, in most cases, discover, after the lapse of a few hours, that he has succeeded in his object. But what will be the condition in which he finds, in numerous instances, his patient, when this has been accomplished? The fever may be diminished or gone—the pulse may be weak or fluttering—the rash may be paler and less vivid in color—but greater restlessness will most probably exist. Can it be truly said that the patient is the better for these

sudden changes? Certainly not: for they are the result of the diminished power of the propulsive action of the heart, and he has taken from his patient, by the use of these depressing agents for the abatement of the fever, an amount of strength, which he, with all his efforts, will find it very difficult to restore, unless it be in a person of sound constitution, and one singularly strong. The simple disease has now been made a complicated one, in consequence of some one or other of the vital organs—the weakest, most probably, peculiar to the individual—becoming affected; and the well-meant endeavors to shorten the duration of the fever have but contributed to the prolongation of the disease. The safest treatment is that which ensures the patient freedom from a worse disease than that he is already laboring under, and which does not add to the original malady the consequence of ‘*nimia diligentia*’ in the imprudent administration of medicines intended to arrest its progress.

“From what has been already observed, it will, I think, be evident that the successful treatment of scarlet fever depends not upon one description of remedy or one mode of treatment, but upon a proper adaptation of several agents or remedies, applied in due order throughout the course of the disease; and I feel justified in saying, that if this order be adhered to, the course of the disease will be uniform, and there will be none of those severe complications which so frequently supervene towards its termination; nor will the disease be likely to assume a malignant or typhoid character, when it has been properly treated from the first. It is not to be denied that unfavorable conditions and circumstances may, occasionally, so far interrupt or change the usual course of the malady, as to prevent the strict observance of the successive order of treatment recommended. In such cases, the untoward symptoms must be combated by other agents which the knowledge and intelligence of the practitioner will enable him to supply.

“In the treatment which I have found so successful for the cure of scarlet fever, there is nothing absolutely new beyond the precision of the rules for the employment of emetics and purgatives, and the persistent use of quinine as the chief remedy. I have explained further on why I found it so difficult to render the system tolerant of this valuable febrifuge during the course of this malady. The success of the treatment is, therefore, dependent upon the adaptation, in regular order, of all that is valuable out of the many agents hitherto employed for the cure of scarlet fever by others; and I take no credit to myself beyond the discovery of the most suitable arrangement of these remedies to combat scarlet fever.

“The order of the treatment which I adopt is as follows: 1st, Emetics; 2d, Purgatives; 3d, Quinine; 4th, Opium; 5th, Wine and Diet.

“I have not, for some years, found it necessary to alter this arrangement in treating scarlet fever; nor have I made any difference in the treatment of the disease according to the variety it presented, whether it showed itself as simple scarlet fever, *scarlatina anginosa*, or *scarlatina maligna*, beyond the more liberal use of wine, and larger doses of quinine, in the last-named form. I have found that one and all are to be safely treated on the same plan, subject, of course, to those modifications as to the strength of medicine and the amount of support which particular constitutions demand; and it is with much satisfaction that I add this mite of my experience to that of the eminent men, both past and present, who have written on this formidable and often intractable disease.

“In ascertaining the effect of the different remedial agents, and in deciding on the proper time for administering them, I have had great trouble and anxiety; but I shall feel amply rewarded if the treatment which I advocate in scarlet fever be found, on trial, as successful in other hands as it has proved in my own.”

And again:—

“In a few instances, of adult patients, I formerly ventured to make some variation in the treatment of this disease, by administering decoction of bark with ammonia and bicarbonate of soda. When I adopted this plan, my reasons for doing so were that the heat of skin and efflorescence were very great, the tongue loaded with a brown fur, and the liver much congested, and diar-

rhœa not unfrequently an attendant symptom. I have, however, noticed that this alkaline treatment, although combined with the decoction and tincture of bark, has demanded a more generous employment of wine than I have ever seen required when I have adhered to my usual course of treatment in giving the sulphate of quinine with dilute sulphuric acid."

The emetic employed is to be sulphate of zinc and ipecacuanha powder, and not tartar emetic, which is too depressing; and the addition of a grain or so of cayenne pepper (after Dr. Copland's suggestion) is to be recommended. When the vomiting is over, a dose of scammony and calomel is to be given—six grains to a child six years old—and this is to be followed up, every night, except when the bowels have acted more than once on the following day, by a smaller quantity of the same preparation. And this nocturnal giving of aperients is to be continued until the tongue is perfectly clean, and the desquamation of the skin complete. The third remedy is sulphate of quinine, in conjunction with dilute sulphuric acid and compound tincture of bark, with a little syrup of orange peel (quinine, gr. jss; acid, ℥viii—x; tincture, ℥ss—℥j, for a child of six years). "As," says Mr. Hood, "I regard quinine to be the sheet-anchor of successful practice in scarlet fever, I am relieved of all anxiety as to the result of the disease, when I have once fairly established the regularity of its administration. Formerly I was in the habit of prescribing quinine, or dilute sulphuric acid, in the same order, but without paying the attention which I have since found necessary to the previous exhibition of the emetic and the purgative. Medicine of the latter kind I have, however, found to be of the greatest efficacy in preventing subsequent complications, and insuring a favorable termination of the disease. Though I never lost a patient under the former course of treatment, I yet had often to contend against the complications that followed the subduction of the primary disease. Some of those cases were of the most severe kind; and I am now disposed to attribute much of this severity to the use of the very remedy, namely, quinine, which I now find so eminently advantageous in preventing any such description of sequelæ or complications." And again he says: "Since making this discovery, I have never had a case of scarlet fever in which the patient has not passed through the disease favorably, and without any secondary affection of a vital organ subsequently occurring." The opium is given for the purpose of abating extreme restlessness, and inducing sleep; and the proper time for giving it is after the bowels have been freely emptied, and the tongue has become perfectly clean, *not before*. Five minims of Battley's black drop in a little water sweetened with syrup of orange-peel, are given to a child of four years, and repeated every night until tranquillity is restored. The diet is to be perfectly liquid until the desquamation of the skin is complete; and, as a rule, wine is not required, except in adults. Mr. Hood does not recommend the use of nitrate of silver in any form until there is ulceration of the tonsils; and his favorite gargle is the juice of a large lemon, and a tablespoonful of honey, in a pint of thick barley-water. Mr. Hood also objects to the application of leeches to the throat, and he uses repeated hot linseed poultices for the purpose of bringing down the swelling.

Such is a sketch of his plan of treatment, but there are details for which we have no space, and which must be sought for in the book itself—a book which is well worthy of perusal.

—With regard to the crowing inspiration, we would merely say that Mr. Hood is disposed to refer this symptom to the mechanical interruption to respiration and circulation from an impeded action of the diaphragm, and pressure on the lungs, which impediment and pressure is occasioned by the unnatural size and weight of the liver; and he thinks that the spasms are more frequent and stronger, and the danger more imminent, in direct proportion to the size and weight attained by the diseased organ.

Elements of Psychological Medicine: being an Introduction to the practical study of Insanity. By DANIEL NOBLE, M. D., Visiting Physician to the Clifton Hall Retreat, Lecturer on Psychological Medicine at the Chatham Street School of Medicine, Manchester, &c. Second edition. (8vo, Churchill, 1855, pp. 356.)

The study of insanity, as presented by Dr. Noble, is stripped of much of its obscurity, by his separation of what is strictly acknowledged to be ascertained truth, from what has no foundation beyond speculation, or what has even been proved to be exaggerated and false. When he enunciates views of his own he is always careful to distinguish between what is ascertained and what is problematical; and he indulges in no speculative views, but such as are more than rationally hypothetical, when they are beyond the limits of absolute proof.

This second edition has been almost entirely rewritten. The introductory chapter, after showing how much the study of insanity has been neglected, points out its importance in the demands of ordinary practice—in forensic investigations—and in attesting the fact of insanity, by fulfilling the requirements of the law in the certificates required by the commissioners, before removal to an asylum.

Dr. Noble defines insanity as an “apyrexial disorder of the brain, perverting thought or feeling, to the destruction or impairment of moral liberty.” The leading facts of psychology, in their relation to physiology, and *vice-versâ*, must be well understood before psychological medicine can stand on a rational and scientific foundation. This correlation of psychology and physiology is treated of in the second chapter, which contains a concise and lucid statement of the present condition of our knowledge, from the simpler manifestations of nervous function, to the highest form of consciousness—thought.

The subject of the “emotional sensibility,” and its actions upon the system, Dr. Noble treats in a very novel manner. By emotional sensibility is meant the pervading sense of bodily existence. It is sometimes confounded with, though it is distinct from, common sensation. It has no uniformity with tactile sensibility. It may render the warrior insensible to sensational impressions, as there may exist excessive pain without emotional excitement. Opium will depress common sensation, while it exalts that which is emotional. This sense is localized in the peripheral extremities of nerves throughout the entire body, but more especially those supplying the thoracic and abdominal viscera, and Dr. Noble suggests the optic thalami and corpora striata as the separate and proper ganglionic centre of the emotional sensibility. Comparative anatomy favors this opinion; and vivisection and morbid anatomy (though their evidences may not be conclusive) are likewise corroborative.

Emotional sensibility, like common sensation, has its special reactions. A pleasurable feeling is denoted by a cheerful countenance, and a light elastic step; whilst sorrow has an anxious look, a heavy tread, and measured gait.

Ascending to the highest form of consciousness, we find every idea, and every class of ideas, has its correlated sensibility. Sentiment, affection, and passion, are dependent on the effect of ideas on the emotional sensibility, and the reaction of this upon thought. Here the optic thalami and corpora striata are acted on *from above*, viz., from the hemispherical ganglia, through the agency of white fibres.

It has been generally held that the emotions entirely consist of either pleasurable or painful sensations resulting from thought or ideas. Dr. Noble's views on this point are worthy of particular notice and reference. He believes in the speciality of emotional sensibility—in its distinctness from common sensation. Thus “hot and cold, hard and soft, moist and dry, as sensations, are distinguishable conscious experiences, called forth by the qualities of objects, but in themselves subjective states, pleasurable, painful, or neutral, as the case may be.” Our inward experiences are limitless, and we recognize *their* distinctive characters, when we are the subjects of love, fear, hatred, hope, &c. These feelings may be pleasurable, or painful, but something be-

yond the pleasure or the pain constitutes the emotion. *Sweetness is sweetness*, but it is not always a pleasurable sensation—to some it may be unpleasant.

The *emotions* may be experienced to some extent, in the absence of corresponding ideas. Thus, "when a dog barks loudly, I start, from an *emotion* of fear, an experience distinctly prior to the *idea* of danger. In nervous and mental maladies, emotional states of every kind are frequently witnessed without the presence of those ideas which ordinarily produce them. Hopefulness, joy, grief, and timidity, are perpetually encountered under these circumstances. . . . It is within the experience of almost every one to have felt joy, sorrow, and anxiety, as the result of a dream, the ideas connected with which have passed entirely from the mind." Though these views of Dr. Noble may have something speculative in them, they are practically useful in enabling us to form "clearer conceptions regarding many pathological as well as physiological phenomena."

What is the will? Ordinary thinking goes on without it. It can be regarded "neither as a faculty apart from other states of mind, nor as mixed up particularly with any distinct and special ganglionic structure." It is to be regarded, as well observed by Mr. Morell, "as an expression of the totality of our organic power, the whole governing the parts, and directing to the fulfilment of one purpose."

Pathology of insanity.—In all cases there is disordered action of the brain. This conclusion is not invalidated by the non-existence of sensible physical alterations discoverable after death. In other undoubted diseases of certain organs the morbid anatomist finds himself at fault. Inflammation often accompanies the invasion of insanity, but it does not constitute the malady. Insanity, however produced, exists only when the "mental aberration has established itself independently of ordinary diseases," and "it consists in a peculiar disordered action of the hemispherical and emotive ganglia, the abnormal phenomena resolving themselves into functional disturbance of these structures." In the present state of knowledge attempts to localize varieties of insanity must be sought mainly in physiology, and not in *post-mortem* lesions. We must infer particularly ganglia to the implicated according to perversion of their particular functions, and explain the corresponding derangements of the health, by the intimate sympathy subsisting amongst all collections of vesicular neurine.

Varieties of insanity.—These can only be appreciated when studied in their physical and moral relations. To arrive at real and *essential* differences is probably impossible. The basis of a classification founded on the physiology set forth in the second chapter, offers perhaps the most lucid arrangement yet proposed.

Insanity shows itself in three forms, and is divided by the author into Emotional, Notional, and Intellectual.

Emotional insanity.—The majority of cases come under this head. It is characterized by exalted, depressed, or depraved emotional sensibility, with *perverted thought* and a considerable *diminution of self-control*. It is instanced in melancholia, violent and destructive dispositions, exalted enthusiasm, &c. What have been termed clepto-mania, pyro-mania, eroto-mania, religious madness, belong to this class. Dr. Noble believes its seat to be in the emotional sensibility caused by perverted function of the optic thalami and corpora striata, with their correlated ganglia.

This form of insanity is found accompanied by great physical endurance—there is almost an immunity from the dangers of bodily diseases, though exposed to its most perilous causes; and great unhappiness is generally experienced in some of its stages.

Dr. Noble discusses at great length these two questions: Does disordered emotion, dependent upon pathological states, of itself constitute insanity? and, Is an individual, under such circumstances, irresponsible for criminal acts? His conclusions are, that "cases of purely emotional insanity are, at least, very rare; and that perversion of the intelligence, in some form or other, should always be sought for, and anticipated when morbid sensibility causes eccentric and irregular actions." He believes impairment of moral freedom, in certain emotional states, to be distinct from insanity; and where perversion of the

appetites, resulting from voluntary antecedents, leads to sin and crime, there is moral responsibility.

Notional insanity.—Characterized by a false or perverted idea, or set of ideas—morbid notions of which the mind, neither by reason nor demonstration, can be got rid. It is the madness of Ajax or Orestes. In this form erroneous ideas are more prominent than debility or disorder of the higher intellectual faculties. There are morbid perceptions and false notions, rather than defective powers of combination. Its seat is assumed to be the hemispherical ganglia. The varied forms of monomania belong to the form of notional insanity.

Intelligential insanity.—Here there is inaptness of the intelligence, exhibiting itself either in delirious evolution of thought, or in the absence of available thinking. It is characterized by defect in volitional co-ordination of thought, rather than by delusive notions. No particular notions are dominant; it is their disorderly spring, without due subordination to the will, as in the ordinary forms of mania. Where intelligence is abolished it is *dementia*. *Idiocy* is the abortion of mind. In dementia there is often a singular apathy observed; but it is remarkable how many cases exist with a "certain degree of soundness in the emotional sensibility, and also a due sequence of ideas that stand in special relation to this latter; all the actions flowing from this source having normal characteristics, the seeming result of habit maintaining itself unbroken." Intelligential insanity must be considered as having its seat in the hemispherical ganglia, and the mischief of a more diffused character than in notional insanity. Failure of mental power is often spoken of as caused by *ramollissement*, but "there is no sort of uniformity either of association or of sequence."

Diagnosis of insanity.—Under this head, the author treats of the distinction between depression of spirits or irregular excitement, and emotional insanity; distinguishes eccentric conceits from notional insanity; and also febrile delirium, arachnoid inflammation, and delirium tremens, from intelligential insanity. The distinction is also noticed between mere foolishness and semi-idiotcy.

Prognosis.—The importance of studying the circumstances which determined the invasion is first treated of. Actual phenomena alone do not supply decisive indications; but these, combined with the determining circumstances, and the reactions occurring under influences of every kind, enable us to form opinions of the highest value. With regard to particular symptoms, the condition of the emotional sensibility is always of paramount consideration. The author concludes the subject of prognosis, by inserting a series of aphorisms having the high authority of Esquirol.

Etiology of insanity.—In the class of predisposing causes hereditary transmission holds a prominent place. Numerous illustrative examples are cited. A vitiated state of the blood also belongs to this class; but notwithstanding the increased attention paid, of late, to humoral pathology, Dr. Noble thinks we have no information of a precise and decisive character; but he says, "when the cerebral tissue partakes of that vice which predisposes to insanity, any serious deterioration of that fluid upon which its functional activity depends may give effect to the predisposition;" and, again, "there is no reason for regarding such states as always concerned in its production."

Amongst exciting causes, there is a large group spoken of as "disordered sympathies." The sympathies of the stomach, of the small intestines, of a loaded colon, of worms, of depraved states of the biliary organs, of the kidneys; morbid affections of the heart and lungs, and of the reproductive organs, especially of the female sex—all these are duly considered. Such morbid sympathies existing may, however, be merely concomitant circumstances, and not exciting causes.

There are also *external physical causes*, as mechanical violence—*coup de soleil*—heat and cold—alcoholic excesses—the use of narcotics, as opium and tobacco—gout and erysipelas—sexual excesses—insufficiency of sleep—the puerperal state—sudden reductions of diet and withdrawal of stimulants—poor food—and a wretched sanitary condition.

The *moral* causes are domestic cares and love, in the female; and sensual excesses, business anxieties, and disappointed vanity in the male sex.

The effects of advancing civilization in the development of mental maladies are discussed, and the author concludes "that the affirmative of this proposition can hardly be maintained dogmatically." Moral contagion is also spoken of, and illustrations given.

Medical treatment.—*Physical*, or the more strictly medical. No greater mistake can be made than that insanity is but little amenable to medical treatment and more especially at the outset. It must be regulated by physical, rather than by the psychical indications, and with especial reference to the exciting cause. If it arises from external causes, as injuries, the treatment must be that of a judicious surgery. Insane patients are usually intolerant of depletion. The highest excitement may exist without so much as *irritation* of the brain in a physical sense; indeed, it very frequently occurs from exhaustion and debility. Again, the head does not always demand the chief care and attention; the prominent indications being often determined by the state of the blood, as retained excreta from hepatic obstruction, or the presence of urea.

Insanity is often associated with anæmia or chlorosis, and these affections must be judiciously treated. The retrocession of disease, as gout and erysipelas, cutaneous affections, and suppressed discharges induce disordered sympathies, as well as vitiate the blood, and the curative indications must be followed. The use of opium—attention to stomach and bowels, diet, and the cessation of usual stimuli are important points of practice, not only when insanity arises from physical, but also from moral causes.

Moral treatment of the insane.—This subject is treated of in the last chapter, which extends to fifty-four pages. When insanity is divested of all discoverable ailment of a physical character, the proper management is to address ourselves, primarily, to the consciousness itself. "The right treatment of uncomplicated insanity is moral." Changed functions and alterations of the organization may be effected by purely moral agencies. Medical men must not be regarded as leaving off treatment because bloodletting, counter-irritation, and drugs may cease to be employed. The following remarks on this point are forcible, and are quoted as an illustration of Dr. Noble's style. "It is the office of the medical adviser to guide and direct a patient at all times, and under all circumstances, in the matter of health and disease; pointing out to him when in health the way to continue so, and when sick the course whereby health may be recovered. And whatever the process which the preservation of health or the removal of sickness may involve, it is the practitioner's business to direct. This may be simply a day or two's rest in bed, or it may be a tour for recreation; a course of purgatives may be indicated, or a temporary use of bitters or of iron; an extended or more diversified social intercourse may be the requirement, or a partial withdrawal from excitement of this description; it may be the engagement of the mind in some special pursuit, encouraging hope, and exciting pleasing anticipation; or it may happen that a certain wild enthusiasm needs to be moderated. But whatever it be, if it influence health, or be likely either to provoke or alleviate disease, it comes clearly within the province of the medical man. And so long as the physician engages himself in watching his patient for the patient's own good, so long as he maintains a directing control over his course of life, he cannot be justly said to have left his patient to nature, or to have abdicated his proper functions, although for weeks he should neither prescribe a drug, nor abstract a drop of blood, nor irritate a square inch of skin."

The subject of coercion and restraint; pursuits and occupations; influence of old associations; the management of idiots; and the removal of insane patients to well regulated asylums or retreats, are considered at length, and the volume closes with a brief formula for the entire treatment of insanity.

On neglected Brain Diseases as leading to Suicide. By FORBES WINSLOW, M. D., D. C. L. (*Journal of Psychol. Med.*, July, 1857.)

It is the purport of this paper to direct attention to the inexcusable neglect with which affections of the brain are generally treated by the public, and the lamentable amount of ignorance that unhappily exists in the non-professional

mind respecting these disorders. "This neglect and ignorance," says Dr. Winslow, "is fraught with much irremediable mischief—alas! often leading to the sacrifice of valuable human life. The poor overwrought brain meets with but little attention and consideration when in a state of incipient disorder. The faintest scintillation of mischief progressing in the *lungs, heart, liver, and stomach* immediately awakens alarm, and medical advice and treatment are eagerly sought; but serious well-marked symptoms of brain disorder are often entirely overlooked and neglected; such affection frequently being permitted to exist for months without causing the faintest shadow of uneasiness or apprehension in the mind of the patient or his friends. Morbid alterations of temper—depression of spirits, amounting sometimes to melancholia—headache—severe giddiness—inaptitude for business—loss of memory—confusion of mind—defective power of mental concentration—the feeling of brain lassitude and fatigue—excessive *ennui*—a longing for death—a want of interest in pursuits that formerly were a source of gratification and pleasure—restlessness by day and sleeplessness by night—all obvious indications of an unhealthy state of the functions of the brain and nervous system, rarely, if ever, attract attention until the unhappy invalid, becoming unequivocally deranged, commits an overt act of insanity. Then the exclamation is, 'Poor fellow, his mind has been affected for months!' and no one expresses any surprise that he should, in such a state of mental disorder, have hung himself or cut his throat! It is difficult to induce the public to take a common sense and right view of this important subject; for if the saving of life is our object, it is to the *public* mind we must plainly address ourselves. If a person, in a previous state of mental and bodily health, is conscious that abnormal changes are taking place in the mind—that trifles worry and irritate—that the brain is evidently unfit for work—that the spirits are flagging—that all the evils of life are magnified; if he is disposed to be fanciful—imagining things to exist that have no existence apart from himself—believing that kind friends ill-use and slight him;—if symptoms like these, or analogous to these, are associated with headache, derangement of the stomach and liver, and want of continuous sleep, *the patient may assure himself that the state of the brain is abnormal, and requires careful consideration and treatment.* How often such apparently trifling symptoms of brain disorder precede the fatal act of homicide and suicide! How much may be said for those driven by unrecognized and neglected disorder of the brain and mind to acts of self-destruction!"

Then, with a view of establishing beyond the possibility of a doubt, the important fact that an enormous sacrifice of valuable life is the result of neglected brain disease, Dr. Winslow takes the sad history of Hugh Miller, together with a number of cases of suicide—nearly seventy in all—collected from the usual channels of daily intelligence, and shows that *in all of these, there existed before the act of self-destruction, well-marked symptoms of physical ill health, and disorder of brain and nervous system.*

The importance of the facts and opinions contained in this paper are self-evident, and our only comment upon them is to express a wish that the paper may soon be found in a form which will secure as wide a circulation as possible.

Tables for the Diagnosis of Diseases of the Brain. By J. RUSSELL REYNOLDS, M.D., Assistant-Physician to the Westminster Hospital, &c. (4to, London, Churchill, 1857, pp. 8.)

These tables are constructed for the use of students and others who may find some difficulty in applying their general knowledge of cerebral diseases to the diagnosis of particular cases, and they answer the end for which they were designed most admirably. They include only the more common diseases of the brain, roughly separated into four large groups. They do not attempt to describe all the features of these diseases, but simply to place in opposition to one another those which present the most striking differences. The general character of each group is stated at the commencement of each table, then the *diagnosis* of particular diseases is arranged in columns, and a rule is appended *or the purpose of suggesting an order in the examination of symptoms.* It is

much to be desired that the diagnosis of other diseases was facilitated in the same manner.

On Epilepsy and Epileptiform Seizures; their causes, pathology, and treatment.

By E. H. SIEVEKING, M.D., Physician to, and Lecturer on, *Materia Medica*, at St. Mary's Hospital, &c. (Post 8vo, London, Churchill, 1857, pp. 267.)

The germ of this work would appear to be contained in a paper recently read before the Royal Medical and Chirurgical Society, of which an abstract (already printed when the work before us was received) will be found in an earlier part of the present volume (p. 60), and to which we now wish to refer any one who desires to know something of the present book before obtaining it for himself. From this abstract it will appear that much stress is laid upon statistical evidence, and that no very original conclusions are arrived at. With regard to the pathology, we are obliged to be at issue with Dr. Sieveking; but upon this point we are free to allow a danger on our part of being unable to deliver a perfectly impartial judgment. At the same time we may be allowed to cling to our own opinion until it be controverted, and assuredly it is not controverted, either directly or indirectly, in the work before us.

On Electric Chorea. By Dr. JULES GUERIN. ("Gaz. Hebd. de Méd. et Ther.," June 16, 1857.)

Dr. Dubini, physician to the large hospital at Milan, was the first to draw attention to this affection, and to call it by its name of *electric chorea*—a name which was chosen in consequence of the similarity between the convulsive shocks of the limbs and the shocks which are caused by the action of the induction coil. Dr. Dubini wrote in 1846. Shortly afterwards, cases of a similar character occurred in the same hospital at Milan, under the care of Dr. Frua and Dr. Morgante, and at Pavia under the care of Dr. Scottini and Professor Pignacca. Dr. Frua described the affection under the name of *typhus convulsivo-cerebral*; and a German physician, Dr. Hörstel, who reports two cases, gave to it the name of *myelitis convulsiva*.

Electric chorea appears to be peculiar to certain districts of Lombardy, and there to be by no means an uncommon affection. Thus, in nine years Dr. Dubini has collected thirty-eight cases, and Dr. Frua, fifty; and in six years Professor Pignacca, aided by his colleagues in the hospital at Pavia, has also collected fifty cases. Dr. Jules Guerin obtains his information on the subject partly from an article in the Turin "*Giornale delle Scienze Mediche*" (December 31st, 1856), and partly from a report which has recently been presented to the Medical and Chirurgical Academy of Turin, by Dr. Girola.

Electric chorea may be either acute or chronic, and in either case its termination is almost universally fatal.

Its peculiar characters are—1. Certain choric convulsive shocks in the limbs, occurring rhythmically, persisting with scarcely any intermission for hours, days, or even weeks, and followed by a paralytic condition of the convulsed muscles, and by an atrophied condition also, if life is prolonged sufficiently. 2. Certain tonic convulsions of great violence, affecting the muscles in which the chronic convulsions are seated, and occurring in paroxysms, sometimes as frequent as thrice in one day. 3. Epileptiform attacks, sometimes general, sometimes partial. 4. Certain cerebral symptoms, such as cephalalgia, delirium, and coma. The predominance of one or other of these symptoms in certain cases, leads Dr. Girola to define three principal forms of the malady—electric chorea, epileptic chorea, and cephalo-electric chorea. Electric chorea, as a rule, begins quietly, and is in no great haste to assume its serious characters. As a rule, also, a delirium lasting for some days, and ending in coma, ushers in the fatal termination. In the epileptic form the paroxysms become more and more frequent, and in one of these the patient often dies asphyxiated. In cephalo-electric chorea the choreic symptoms supervene upon symptoms of meningitis, and the whole course of the disease, from its commencement to the fatal termination, is from nine to thirteen days.

With few exceptions, the attack is ushered in by the convulsive shocks, with-

out any obvious warnings. These shocks affect particularly the limbs on the left side, and the flexors rather than the extensors. Thirty, sixty, one hundred of these shocks, may occur in one minute, occurring in a certain order or rhythm, and accompanied by feeling of pain, tingling, or cramp, in the same parts. Headache, vertigo, humming and ringing sounds within the ears, for the most part accompany these shocks. Eventually, delirium, somnolence, coma, show how much the intelligence suffers under these attacks. Eventually, paralysis or muscular atrophy, sometimes complete abolition of the muscular irritability, show how much the motor system suffers under the same trouble. At first, the digestive functions are but little affected, but after a time the appetite fails, and gastralgia and frequent vomiting may add to the distress. Generally, also, there is no fever; but when the convulsive attacks are unusually violent, the skin may become hot and burning, and the pulse may rise to 100 in the minute, or higher still.

The mean duration of the affection would seem to be from forty to seventy days, if we except a few in which death happened in a few days from urgent cerebral symptoms.

The prognosis is extremely dark, death being the rule, and recovery the exception. According to Dr. Dubini, the deaths were 36 in 38; according to Dr. Frua, 39 in 50; according to Professor Pignacca, 7 in 9.

Examination after death reveals no constant lesion. More or less marked congestion of the cerebral and spinal membranes was the most constant sign; sometimes evident thickening of these membranes; sometimes a degree of softening or induration in different parts of the cerebro-spinal centres. The glands of Peyer were often enlarged to a considerable extent, and worms were never absent from the intestinal canal.

The etiology of this affection is wrapped in profoundest obscurity. Persons living in the country, and males from eleven to twenty years of age, have been almost exclusively attacked; and the season of attack has been winter rather than the warm seasons of the year. Fear, habits of drunkenness, worms, are mentioned as causes.

Bleedings, cold to the head, strychnine, mercurial inunction, cauterization along the spine, vermifuge, purgatives, atropine, blisters, have all been tried, but in vain, if we may judge from the results before specified.

With respect to the pathology of this sad disorder, the only light would seem to be furnished by a remark of Dr. Girola, which is to the effect that electric chorea is developed under circumstances similar to those in which pellagra originates, and that there may be some analogy, so far as the causes are concerned, between electric chorea and raphania, or ergotism of the convulsive kind.

Case of Paraplegia from Obstruction of the Abdominal Aorta. By WILLIAM GULL, M.D., Assistant Physician to, and Lecturer on, Medicine at Guy's Hospital. (Guy's Hospital Reports, Third Series, vol. iii., 1857.)

The nature of the obstruction in this remarkable case is only matter of conjecture; but, whatever it may have been, it obviously dates, as proved by the development of the arterial anastomosis since that time, from the occurrence of the paraplegia.

CASE.—J. B.—, æt. 34, employed as a shipwright in the dockyard at Woolwich. Habits temperate. Accustomed to take part in carrying heavy loads; and being over six feet in height, the greatest share of the weight often falls to his share. At the beginning of March, 1855, being then, as he supposed, in good health, he was suddenly seized, whilst at work in a stooping posture, with pain round the loins. This went off after he had rested a few minutes. With the pain he had a desire to go to stool, but without effect. As he resumed his work the pain returned, and extended down the legs, with a sense of numbness, soon followed by entire paralysis both of sensation and motion, from the loins downwards. The sphincters were paralyzed. After a few days sensation returned, and he was able to take a few steps unsupported. He gradually improved, but the gait remained unsteady, and the use of the legs soon brought on increased weakness and numbness. For these paraplegic symptoms he was

admitted under my care into Guy's Hospital, in June of the same year. On examining the spine, no tenderness nor irregularity could be detected; but on auscultation, a soft, bellows-murmur was audible down the back, but most distinctly at the lower angle of the scapula, on the left side. There was no pain or tenderness at the part, nor any pain in the course of the intercostal nerves. Percussion elicited slight dulness where the murmur was most audible. Anteriorly, under the ensiform cartilage and lower third of the sternum, there was a prolonged bellows-murmur, not heard so distinctly upwards in the course of the aorta, or towards the left axilla. There was no pulsation in the abdominal aorta, nor in the arteries of the lower extremities. The legs were cold, the muscles wasted; no oedema nor any venous turgescence in them. The superior epigastric artery, on the right side, was enlarged, and could be indistinctly seen pulsating for two inches of its length, the blood running from above downwards. From that date until the present time (August, 1857) the case has remained under notice. The superficial arteries of the back and abdomen have gradually enlarged. At the posterior boundary of the axilla, on either side, the small arteries are so numerous as to form a soft pulsating mass, reminding one of the rich arterial plexuses in the intercostal spaces of the cetacea. The enlarged arteries on the back emerge at the fourth and fifth intercostal spaces, and dip again at the ninth. The anastomosis is much more extensive on the back and sides of the trunk than on the abdominal walls. From time to time he has slight returns of weakness and numbness in the legs. No pulsation is yet discoverable in the aorta or femoral arteries, nor in any of their branches. The systolic murmur at the lower third of the sternum remains. The chief part of the murmur now heard in the back, is apparently referable to the rush of blood along the numerous subcutaneous channels of anastomosis. The patient has regained power to walk tolerably well, but his muscles are thin and his gait languid. Feet cold and damp. His general health is good, and he is able to do the lighter parts of his work. The pulsation of the arteries of the upper extremities is full and throbbing, and the heart's impulse increased. There is no sign of venous obstruction.

The Phenomena of Spinal Irritation, and other functional diseases of the nervous system, explained, and a rational plan of treatment deduced. By THOMAS INMAN, M.D., Physician to the Northern Hospital, Liverpool, and Lecturer on Medicine at the Royal Infirmary School of Medicine. (8vo, Churchill, 1857, pp. 201.)

What Dr. Inman proposes to show in this volume is—

1. That the symptoms attributable to "spinal irritation" have nothing to do with the spinal cord, or the nerves arising from it.
2. That the majority, if not the whole of them, are due essentially to the same cause which produces the spinal tenderness.
3. That the spinal tenderness results from overstraining of the fibrous origins of the muscles attached to the spinous processes.
4. That the spinal tenderness is analogous to that experienced at the origin and insertion of muscles in other parts.
5. That the weaker the individual is, the greater is the tendency to fibrous pain.
6. That the most common causes of the pain and tenderness, in any part of the muscles, are constitutional or acquired debility.
7. That debility increases equally the irritability of the muscular and the nervous systems.
8. That before hysteria can manifest its presence there must be debility from some cause or other.
9. That debility may show itself in the muscular or nervous system, or both.
10. That debility affects the nervous system as a whole or in sections—i. e., mental, sensitive, motor, organic.
11. That functional affections in any one or more of these parts have long been recognized as emanating from deficient vital power.

12. That anything which deteriorates the vital power has a direct tendency to aggravate the complaints referred to.

13. That muscular and nervous irritability are subject to the same laws, and that the remarks applicable to the one are, *mutatis mutandis*, applicable to the other.

14. That the link connecting hysteria with spinal disorders is constitutional or acquired debility.

15. That, as regards curious mental phenomena, excess of sensibility in the nerves of common or special sensation, a propensity to spasmodic actions and to irregular organic phenomena, there is no essential distinction, they are simply different facets of the same die.

16. That the essential distinction between genuine hysterical and muscular affections is, that a large amount of bodily rest is necessary for the cure of the latter, while it is not so absolutely requisite for the former.

17. That, for the future, it will be necessary to discriminate between pain arising from muscular fatigue, cramp, or fibrous stretching and genuine neuralgia, and that there will be neither precision in diction nor a clear idea of treatment until the distinction is made.

These are the principal propositions which are set forth in the work before us, and to the establishment of which Dr. Inman adduces evidence which must be allowed by every one whose prejudices will not interfere with the fair exercise of his reasoning powers. At any rate the evidence appears to be sufficiently cogent to us.

The rules of treatment which arise out of these considerations are those upon which we have acted for years, and often insisted upon in clinical and other modes of teaching. Indeed, there are many now who will fully sympathize with remarks such as these: "When," says Dr. Inman, "the profession shall begin to look with jealousy at every dose of calomel, antimony, or digitalis that they order—when they take for a starting-point the axiom that 'disease implies debility,' and 'that everything which weakens a patient must impede his restoration to health'—when bleeding shall have been dismissed to the limbo of scientific fallacies, to be recalled only by some medical judge of supreme knowledge—when blisters become the rifle-shot of the experienced hunter, who never fires without a definite aim, rather than the grape, canister, or the shrapnel-shot of the artilleryman, who fires them comparatively at random—when purgatives are not considered panaceas, and salivation is not a refuge for the destitute of ideas—when active treatment gives way to scientific, and the general health is considered superior to the apparent health of any one organ—when medicines are considered as means to an end, and not as so many doses of bottled comfort—when the doctor recognizes in recovery the result of a natural process rather than the imbibition of so many ounces of physic—when there is a thorough knowledge of what medicine can do, as well as what it cannot—when a discrimination is made between the effects of a disease and the effect of presumed remedies—when the natural history of each complaint becomes more generally known—not only will the science of medicine be fixed upon a firm basis, but it will command a confidence that it has never yet fully deserved.

"Heresies may be possible, but they never will be captivating.

"At present the tendency of medical authors is to hold a magnifying-glass before particular organs, to discriminate between the minutest phases of their complaints, and to discuss the best plans for the relief of this or that symptom. What is wanted is a broad and comprehensive classification, in which life, health, vitality, and nutrition will form the genera, and diseases the species only.

"The question that the physician will then propose to himself will be, how shall I restore the patient to health? not, how shall I attack the complaint? When an organ has gone wrong, or an inflammation has set itself up, instead of punishing the former, and knocking down the latter, the system will be helped to put the one right and to get over the other. A difficulty will be 'tided over,' instead of being crushed; rapidity of cure, rather than an ultimate result will be the test of successful theory, and oh! conclusion most disastrous, the more scientific the physician the smaller will be his emolument!"

On Hypertrophy of the left Ventricle of the Heart in relation to disease of the Aorta and its branches. By W. S. KIRKES, M. D., Assistant Physician to St. Bartholomew's Hospital. ("Medical Times and Gazette," August 1 and 8, 1857.)

Dr. Kirkes' object in the present paper is to show that many examples of extensive disease of the aorta have originated in, and are dependent upon, prolonged overstraining of their walls produced by an hypertrophied left ventricle, especially by such hypertrophy as ensues in advanced renal disease, and is independent of valvular obstruction. His object, indeed, is to support a view, originating, as he tells us, with Professor Dietrich, of Erlangen, but little known in this country.

It is no doubt more than difficult to understand how an hypertrophied ventricle, instead of being the cause, is the consequence of the arterial mischief—how disease of the arterial coats can excite hypertrophy of the left ventricle.

"It is said," says our author, "to do so by weakening the elasticity of the coats, but it is not explained how such weakened elasticity can induce hypertrophy. What is the chief purpose of the elastic coat, beyond the additional strength and power of resistance it gives to the walls? Clearly it is that of breaking the shock which the column of blood in the arterial system would be subjected to at each ventricular contraction, if it were within tubes formed of unyielding walls. In health, when the coats of the aorta are duly elastic, part of the force of the ventricular contraction is primarily expended in distending the arteries; the other part is at once employed in moving on the mass of blood. On the cessation of the ventricular contraction, the stretched arteries recover their former state, and then all the force which had been engaged in distending them—but no more than that force—is restored to the service of the onward current; in other words, this portion has only been held in reserve for the double purpose of lessening the impulsive shock which the column of blood would have otherwise received at each contraction of the ventricle, and of equalizing the arterial current by converting the successive interrupted accelerations of the stream into a continuous onward movement. No additional force, it should be remembered, is given out by the larger arteries, they have no contractile power, or next to none, by which they could of themselves accelerate the arterial stream; all they have is acquired from the ventricular contraction, and this they simply restore when the ventricular contraction ceases. This absence of active self-generating power in the elastic tissues of the aorta renders it difficult to understand why, when the coats are diseased and their elasticity impaired or lost in consequence, the left ventricle should necessarily become hypertrophied. There is no additional impediment offered to the arterial circulation by the coats of the arteries being inelastic. The mere deficiency of elasticity, therefore, does not entail upon the ventricle any greater employment of force to move the column of arterial blood. All that will result from such imperfect elasticity of the walls will be, that much less of the force which in health has to distend the arteries will be required for that purpose, this hitherto reserved force now being employed directly in moving on the mass of blood. The effect no doubt is most injurious; for, deprived of the equalizing power of properly elastic arteries, the blood is sent along with unbroken shocks, to the great detriment of the smaller arteries, and the damage of delicate organs. Still it probably does not require additional force to move the arterial column of blood, and there is, therefore, no additional strain upon the left ventricle, and no likelihood of its necessarily becoming hypertrophied. It is, therefore, as already said, difficult to understand why it should be thought that disease of the coats of the aorta should be the cause rather than, as I believe, the effect of hypertrophy of the left ventricle. By adopting the latter view we have, too, a ready explanation of the arterial disease, which, in the other view, would still have to be sought for."

And certainly there can be no good reason to doubt that arterial tunics, when subjected to unusual and prolonged extension may undergo a compensating increase of thickness and strength by addition to their natural texture; in

other words, by true hypertrophy, and that subsequently, when the powers of nutrition become impaired, these arterial coats may not only cease to become hypertrophied, but may even degenerate into fatty or calcareous matter.

Dr. Kirkes also argues in favor of the view before stated, from the almost exactly parallel condition which is witnessed in the pulmonary artery in cases of emphysema, and consequent hypertrophy of the right ventricle. In this case the dilating air-cells compress and partially obliterate the pulmonary capillaries, and hypertrophy of the right ventricle is the natural sequence to the interruption of the flow of blood through the pulmonary artery. Interrupted in its flow through the capillaries and impelled from behind by an hypertrophied ventricle, the blood distends the pulmonary artery and its branches, and soon these vessels become thickened and degenerated. Now, as in these cases the aorta rarely presents any evidence of disease, this fact must be an extremely strong argument against the view that disease of the coats of the arteries is a constitutional matter, and not one due to a local cause.

It being very probable, then, that hypertrophy of the left ventricle induces, rather than results from, arterial disease, it may be expected that such disease would be found in nearly every case of hypertrophied left ventricle. And what information do we gain on this point from an analysis of cases? Dr. Kirkes answers:—

“One hundred and eighty cases in which I found the left ventricle manifestly hypertrophied, were thus analyzed. Out of these there were 121 in which the aorta was more or less decidedly diseased, 34 in which it was not examined or not noticed, and only 25 in which it was said to be healthy. Omitting the 34 cases in which the arteries were not particularly examined, we have a residue of 146, in all, except 25, of which, the aorta was diseased. It is evident, then, that arterial disease is a very common attendant upon hypertrophy of the left ventricle.

“Yet there were 25 cases in which there was no obvious disease of the aorta. How are these exceptions to be explained, if the view be correct that an hypertrophied left ventricle is the real cause of the arterial disease? An examination of them tends to strengthen rather than to weaken the statement. For, in order that the arterial system should receive the full force of the hypertrophied left ventricle, and suffer in proportion, it is evident that nothing should impede the ejection of the whole mass of blood from the ventricle at each systole. If there be disease of the aortic valves, sufficient to produce obstruction at the orifice, or to allow regurgitation during the diastole, then the aorta and its branches will be relieved from a large part of the ill effects of an hypertrophied ventricle, for much of this extra force will be expended in driving the blood through a narrow aortic aperture in the one case, while in the other, supposing there is no obstruction, which however is rarely the case in regurgitant disease of the aortic valves, the coats of the distended arteries will be, during the diastole, speedily relieved of much of their excessive pressure, by the return of part of the blood through the insufficient sigmoid valves.

“If, again, there be, together with or independent of disease of the aortic valves, sufficient disease at the left auriculo-ventricular opening to impede the flow of blood from the auricle to the ventricle, or to allow of regurgitation during the systole, or, as often happens, of both together: here, also, the arteries will be relieved from the excessive force to which an hypertrophied ventricle would, but for some such intervening condition, have subjected them. One might expect then that, in accordance with these views, the arterial system would be found comparatively free from degeneration when comparatively little subjected to the condition supposed likely to lead to it, viz., prolonged excessive pressure on their walls; while, on the other hand, it would exhibit it in the most marked degree in those cases in which the full force of the supposed exciting cause was brought to bear upon it, as, for example, in those striking instances in which, associated with renal disease, there is extreme hypertrophy of the left ventricle, without any attendant valvular affection. Now, the twenty-five apparently exceptional cases, in which the left ventricle was hypertrophied, and the aorta healthy, instead of militating against, help to demonstrate these points most completely; for, with but two exceptions,

there were, in all the instances, intelligible reasons why the aorta should not have been diseased. Thus, in fourteen, there was extensive disease of the aortic or mitral valves, or of both, sufficient to impede the free exit of blood from the left ventricle into the arterial system. This was evidenced both by the nature of the valvular disease, and, in many of the cases, by an unusually narrow calibre of the aorta, and a corresponding thinness of its walls. This narrow state of the aorta, with thin healthy walls, I have frequently found in cases in which it was evident that an unusually small amount of blood habitually traversed the canal. It has its converse in the wide channel and thickened, but structurally-healthy, walls of the aorta or other arteries through which an unusually large amount of blood continually passes. In four, the hypertrophied left ventricle was associated with disease of the kidney, which ran a rapid course, killing, with acute dropsy, probably before the arteries had time to manifest, in disease of their walls, the ill effects of the over-straining to which the hypertrophied ventricle must have subjected them. In two, the pericardium was adherent, and thus the ventricle would be hampered in its action, and prevented from expending its full force on the blood expelled from it. Similar mechanical impediment to the free action of the heart existed in two other cases—the thorax being distorted in one, the lungs extensively compressed by old false membrane in the other. In the remaining case, the hypertrophy of the left ventricle was only slight and need not be taken into account.

“With but two exceptions, therefore, upon which at present it is scarcely worth while to dwell, the twenty-five cases, which at first seemed to be exceptions to the statement that arterial disease is apt to occur in all cases of hypertrophy of the left ventricle, exhibit in the state of the valves or in other conditions, intelligible reasons why such arterial mischief should not have resulted. Moreover, it should be observed that in much more than half of these cases the amount of ventricular hypertrophy was only moderate, and in most of those in which it was great there was either extensive valvular obstruction, or rapidly fatal disease of the kidney, to explain the absence of arterial mischief. The state of the kidneys, too, in these cases requires a word of comment. In seventeen out of the twenty-five these organs were healthy, so that in them the hypertrophy was probably entirely due to mischief in and about the heart itself, and was therefore probably no more than sufficient to overcome the local obstruction, and to propel, with requisite but not excessive force, the natural amount of blood into the aorta. In only eight were the kidneys diseased, and out of these, four were rapidly fatal; so that in only four out of the twenty-five had the arteries to bear for any lengthened period the effect of the additional hypertrophy induced by the renal disease. This is very different from what was observed in the sixty cases in which the arteries were extensively affected. For in at least twenty-eight out of these the kidneys were found diseased, and, no doubt, this renal affection was an important additional cause of the hypertrophy in many, and apparently the only cause in at least twenty-two, in which there was no valvular disease, or other local cause of cardiac obstruction to account for it. So that in these twenty-two the full force of the hypertrophied ventricle would fall on the arteries, and ultimately lead to their disease; while in those cases in which the kidneys and the valves were affected together, the additional hypertrophy induced by the renal disease would probably act injuriously on the arteries, that resulting from the valvular disease being probably only sufficient to overcome the local obstruction, and no more. There were, indeed, only seven out of the fifty-seven in which, with valvular disease, hypertrophied left ventricle, and extensive affection of the arteries, the kidneys were found healthy. It is necessary to scrutinize these seven cases as carefully as the twenty-five cases of valvular disease without affection of the arteries, in order to determine why the arteries were diseased in them, and not in other instances of valvular disease combined with healthy kidneys. For of the latter set it was observed that the amount of hypertrophy undergone by the left ventricle was probably no more than sufficient to compensate for the obstruction offered to the exit of blood from this cavity into the aorta, and not enough to propel an undue amount with undue force; but

that if disease of the kidneys be superadded to the valvular disease, the additional hypertrophy thus induced will all fall injuriously upon the aorta; while if the kidneys alone are diseased, the valves being healthy, the whole amount of the consequent hypertrophy will fall upon the arteries.

"Now, a careful examination of the seven cases showed, in the first place, that, in every instance, with but one doubtful exception, the mitral valve was efficient, so that, there being no regurgitation into the auricle, all the force of the ventricle, which in nearly every instance was greatly hypertrophied, would be expended in the direct course of the blood. If the obstruction at the aortic orifice were great, it would be largely consumed there; if little, most of it would go on to the arteries, and act injuriously upon them; if there were no obstructions at all, then the whole force would probably be expended upon the arteries. In three of the cases there was considerable obstruction, and, combined with this, there was evidently aortic regurgitation. The effect of both these conditions would naturally be to relieve the arteries of a considerable amount of the extra distension to which the hypertrophy of the left ventricle, which was very great, would otherwise have subjected them; and, as might have been anticipated, the amount of aortic disease in these cases was much less considerable than in those cases in which there was no such obstruction. In the remaining four, the aortic obstruction was very slight, so that, with complete efficiency of the mitral valve, the full force of the contracting ventricle would be conveyed into the arteries, and distend them in an unwonted degree. Instead of being exceptional, therefore, these seven cases, like the twenty-five other apparently exceptional cases, are really in complete accordance with the view that the amount of arterial disease is in great measure proportioned to the amount of force with which the hypertrophied left ventricle can act directly upon the coats of the aorta, being greatest when the obstruction at the aortic orifice is least, and *vice versa*. Additional confirmation, too, is furnished by the cases of slight aortic disease associated with disease of the valves; for in the great majority the amount of mischief in the arterial coats was very trivial, especially when there was manifest obstruction at the aortic orifice. The canal of the aorta, too, in many such cases was mentioned as being narrow, which is further proof that, although the left ventricle was hypertrophied, no increased, but rather an unusually small amount of blood, was propelled into the arterial system.

"We seem, then, to be led to this conclusion, that hypertrophy of the left ventricle is apt to be accompanied by disease of the coats of the aorta, but that this concomitant disease is far more likely to ensue when the valves are healthy than when they are diseased, and this for the reasons just stated."

It is to be understood that the foregoing remarks on the probable cause of arterial disease in general have relation chiefly to the larger vessels.

Pathological and Practical Observations on Diseases of the Alimentary Canal, Esophagus, Stomach, Cæcum, and Intestines. By S. O. HABERSHON, M. D., Assistant-Physician to Guy's Hospital, &c. (London, Churchill, 8vo, pp. 387, 1857.)

Diseases of the stomach have, during the last few years, received considerable attention, and our medical literature has been greatly enriched by the labors of Budd, Handfield Jones, Chambers, Brinton, and others; but the subject is far from exhausted, as all who read the present work will find. Indeed, a work so full of valuable cases and sound deductions must always be welcome to the practitioner who is anxious to increase his stock of knowledge.

The chapters of this work are divided according to the anatomical divisions rather than in a strictly pathological manner. The first chapter contains many interesting cases of disease of the Esophagus, some of them obscure in their pathology, and very insidious in their origin; some instances of ulceration, perforating the trachea or bronchi, which Dr. Habershon has described, have generally, and we believe incorrectly, been considered as instances of *cancerous disease*. The forms of disease of the stomach, the subject of the next section, have obtained from authors very considerable attention. It is the au-

thor's opinion, we believe, that there are forms of ulceration, superficial and evanescent, which leave scarcely more trace in the mucous membrane of the stomach than the aphthous ulceration of the mucous membrane of the mouth, whilst others are permanent, and show themselves after death; and that in some respects we find the same forms of diseased action in the mouth as in the stomach; the inflammatory congestion, perverted epithelial growth and secretion, sluggish condition of the circulation, or acute inflammatory disease, as stomatitis, as well as fibroid and cancerous disease. Ulceration of the stomach is probably a more common condition than is generally supposed, and in many instances yields to judicious treatment; and the instances adduced show that there are several distinguishing marks by which it may be known from cancer. Fibroid degeneration of the pylorus has generally been considered as of a cancerous nature; and whilst we are unable to remove this almost certainly fatal form of disease, we may, as in cancer, do much to mitigate the symptoms and to prolong life. During the time that this work has been in the press, the investigations of Dr. Murchison on gastro-colic fistula have been published. He has shown, by extensive research, the pathology of these cases by collecting the experience of numerous observers. In the two or three cases that have come under the author's observation, it has appeared that cancerous growth in the stomach had led to adhesion with the omentum, or colon, or both, that new product has become effused, and the mucous membrane of the colon infiltrated, and the perforation taken place from the disintegration of this secondary product, rather than by direct perforation from the part primarily affected; this appeared to be the reason, in the case recorded, that no fecal vomiting took place.

In the so-called functional disease of the stomach, chemical research has removed much that was obscure, and will do still more to clear up the pathological changes induced; and the investigation of the physiological connections of the sympathetic nerve and the branches of the semilunar ganglia will enable us more correctly to estimate the very varied symptoms produced in dyspepsia, many of which have their origin in this source.

The chapter on the duodenum presents us with instances of disease which closely simulate disease of the pyloric extremity of the stomach.

The next chapter is on Gastro-Enteritis and Enteritis, diseases in which correct diagnosis is very important; in the latter class of disease, especially, life may be easily sacrificed by time thrown away, and by improper treatment; in the former, with judicious diet, warmth, demulcents, &c., recovery generally takes place. "Whilst we strongly recommend, in many of these instances of gastro-enteritis, the avoidance of mercurials, the value of salines, of bicarbonate and chlorate of potash, and carbonate of soda, are well known to those who have carefully watched the effect that has followed their administration."

In the chapter on Strumous Disease of the Intestine and Peritoneum Dr. Habershon has sought to show that these are only part of a general perverted nutrition, and that, in many instances, disease in other organs is entirely obscured by the more marked affection of the abdominal viscera; here, also, he strongly urges the avoidance of mercurial medicines and of drastic purgatives; and says that the lives of many delicate children are sacrificed by worm powders and quack nostrums administered in these diseases.

The next class of cases in Chapter VIII., is on diseases of the Cæcum and its Appendix. Here he has shown that very many instances of cæcal distension and of local enteritis arise, as well as the more serious class consequent on perforation of the appendix; he has also given numerous instances of these forms of affection, and their perusal will show the great similarity in the symptoms and their general course. Dr. Burns, in a valuable paper in the "Medico-Chirurgical Transactions," described, several years ago, some of these affections. It would appear that the symptoms of cancerous disease of the cæcum are different from simple cæcal enteritis and perforation; and that in many cases we may discriminate the character of the complaint. It will be found that treatment may do much to relieve and to assist the cure of cæcal disease; the pain seeks for rest, but it is well after the acute pain has subsided, still to maintain absolute repose for several days. The bowels are often confined, but the use of purgatives generally aggravates the disease without effect-

ing the desired operation ; it is better obtained by the application of leeches and by opium ; the use, also, of mild mercurials with opium, in these cases, appears to hasten the subsidence of the morbid condition.

In the ninth chapter the author points out the characters of the several forms of Diarrhœa, not forgetting the fact that diarrhœa is merely a symptom of very varied conditions, and that in many instances it passes almost imperceptibly into dysentery.

Dysentery and Colitis are the subject of the tenth chapter ; and the instances adduced show that inflammation of the colon, of most severe form, arises in our own country. Most of the writers on this subject are those who have observed it abroad in its worst forms. In some of the cases typhoid fever was simulated ; in others, perforation of the colon had taken place ; in one there was pyæmia and commencing suppuration in the liver ; in several chronic cases the secondary effects were shown in producing contraction of the intestine, perforation, and artificial anus, &c. ; as regards abscess in the liver, in one the abscess had dried and contracted ; in another, fresh diseased action was set up around it, and abscess in the brain the result. He confesses that in some of the most severe forms all treatment is ineffectual to cure, whilst it partially soothes and relieves ; but in the great majority of instances demulcents by the mouth, and enemata, astringents used in a similar manner, opium, ipecacuanha, &c., avail to stay the disease, and shorten its duration.

The author had intended to have given some observations on Asiatic cholera, but for several reasons he has not done so ; firstly, because although the disease manifests itself more apparently in the disturbed functions of the alimentary canal, it has not been clearly shown that the disease is really one affecting alone or principally the abdomen ; and secondly, because the facts known in reference to this disease are better and more clearly given in the report drawn up by Dr. Baly and Dr. Gull.

In the chapter on Typhoid Fever, he has merely described the condition of the abdominal affection, without entering into the general question of fever, and its treatment ;—in the latter, it is well to guard against the danger of so freely administering opiates to check diarrhœa as to lead to cerebral oppression, and excessive engorgement of the lungs, from imperfect performance of the respiratory function.

In the chapter on Colic, he has cursorily spoken of the simpler forms of the disease, and separated the more severe forms of ileus—internal strangulation, intussusception, and cancerous disease of the colon, in Chapter XIV. It will be found that whilst the latter conditions bear strong general resemblance in producing often fatal constipation, they may, in many instances, be distinguished, the one from the other ; intussusception having close resemblance to simple colic, and, in not a few instances, accompanied by discharge of bloody mucus, or with actual diarrhœa ; this latter symptom sometimes arises even with cancerous disease of the sigmoid flexure. He has very strongly urged the avoidance of drastic purgatives, calomel, colocynth, and even milder purgatives, and as strongly recommended the free administration of opium ; the cases detailed almost universally show, that where purgatives were given, vomiting, pain, and distress were increased, whilst these and other symptoms were, on the contrary, relieved by opium. Opium, in such cases, appears to be the best means of procuring relief to the bowels, if it be possible. The chapter on Worms is very short.

The cases of Suppuration in the Abdominal Parietes, and of Perforation of the Intestine from Without, are an interesting series ; many of them obscure in their diagnosis, and very varied in their course. Great care is required, attention to the symptoms as they become fully developed, and the avoidance of hastily aggravating the symptoms by too active treatment.

A Glucometer for determining the amount of Sugar in Diabetic Urine, &c., adapted for Clinical Investigations. By A. B. GARROD, M. D., Physician to and Professor of Materia Medica at University College, London. (Medical Times and Gazette, December 5, 1857.)

The principle upon which the Glucometer is constructed rests upon the fact,

that glucose sugar ($C_{12}H_{22}O_{11}$) when boiled with carbonate of potash gives rise to an amber color, the depth of the tint depending upon the amount of sugar present. Bicarbonate of potash produces no such change of color, and the tint with caustic potash may vary from other causes than the quantity of saccharine matter.

The apparatus consists of a standard, a graduated tube of the same caliber as the standard, and an accurately divided minim measure. The standard contains a solution having the exact tint produced by half a grain of diabetic sugar to the fluid ounce: *it should be kept from the light when not in actual use.*

Method of employing the Glucometer.

1. *Qualitative Analysis.*—Put into a test tube a small quantity of the urine, and add about an equal bulk of liquor potassæ, 1 h. Lond., heat over a spirit lamp, and allow the fluid to boil for half a minute. By this operation (Moore's test) we ascertain whether sugar is present; and, by observing the amount of color, have a guide to the subsequent dilution of the urine, which is often necessary before proceeding with the quantitative analysis, in order to prevent the graduated tube being of inconvenient length.

2. *Quantitative Analysis.*—If the tint in the above experiment be not deeper than an amber red, no dilution will be required before it is examined; if of a dark red, the urine should have about its own bulk of water added to it; if of a reddish brown, three times its bulk; if of a dark brown, seven times, &c. This dilution may be readily effected by means of the graduated tubes, employing about a drachm of the urine for the experiment. Having made the necessary dilution with distilled water,* accurately measure in the minim glass half a drachm (30 minims) of the liquid, and add an equal amount of the solution of carbonate of potash,† introduce these into a small flask or large test tube,‡ and wash out the measure with about a drachm and a half of water. Heat to the boiling point, by means of a spirit lamp, and keep the liquid at that temperature for five minutes; if the contents of the flask be found to have a color much above that of the standard, water may be added: and when somewhat cool, the whole transferred to the graduated tube, and dilution carefully made until the tint exactly accords with that of the standard. Care should be taken, on each addition of water, to ensure a thorough admixture of the fluid in the tube. All the required data for determining the amount of sugar are now obtained. Suppose a sample of urine, when treated with liquor potassæ, to give an orange-red color, and that it has afterwards been increased to four times its original bulk by the addition of three parts of water; again, suppose that the half drachm employed in the quantitative analysis requires to be further diluted, so as to occupy $6\frac{1}{2}$ drachms before the exact tint of the standard is obtained; such urine would contain 26 grains of sugar per fluid ounce; for the first dilution increases the bulk fourfold, the second 13; therefore, four times thirteen, or 52 half grains, or 26 grains of sugar are present. If a portion of the 24 hours' urine is made use of, and the total quantity measured, the daily elimination of sugar can be readily determined.

The method of ascertaining whether the tint of the liquid corresponds exactly with that of the standard, is to hold the tubes, side by side, directing them to moderately bright light; such as that of a white cloud, sometimes a thin piece of writing paper placed behind the tubes enables the identity of tint to be better observed. Lamp or gas light is not well adapted for the experiment.

Should the urine contain but very little sugar, some slight alteration in the process may be made; one or two drachms may be heated with but a small quantity of the solution of carbonate of potash, and without the employment

* A substitute for distilled water in the above analysis can be obtained, by adding a few grains of carbonate of potash to ordinary water, and allowing the carbonate of lime to be deposited, then pouring off the clear fluid.

† The solution of carbonate of potash is thus prepared: Dissolve four ounces of carbonate of potash in six fluid ounces of water, and filter.

‡ A small German glass flask, of about an ounce and a half capacity, is best suited for the experiment, which can be held over the spirit lamp by a small holder; if a test tube be employed, it should not be of less capacity than the flask.

of more water than is sufficient to wash out the measure; when the amount of sugar is less than half a grain to the ounce, the glucometer can only give approximate results.

If the urine contains much coloring matter, which seldom occurs in diabetes, the fluid may be completely decolorized by the addition of some animal charcoal (bone black), and subsequent filtration, an operation readily and speedily effected.

Lastly, should the liquid be found not perfectly transparent, it should be passed through a small paper filter before dilution to the standard tint, care being taken to wash the filter with a little water; when distilled water has been employed throughout the analysis cloudiness is seldom observed.

It should be remembered that the correctness of the result depends upon the accuracy of the measurements, and on the careful comparison with the standard.

A Manual of Medical Diagnosis, being an analysis of the signs and symptoms of disease. By A. W. BARCLAY, M. D., Assistant-Physician to St. George's Hospital. (London: Churchill, 12mo, pp. 612, 1857.)

It cannot well be doubted that medical diagnosis is not taught with the same precision and clearness in this country as in many parts of the continent of Europe, and especially in the hospitals of Paris; and hence an attempt to remedy this deficiency must necessarily be received with favor. We are bound to say, also, that Dr. Barclay has good reason to be satisfied with his labors, and that his shortcomings are little more than those which must necessarily exist in a first edition, where the subject is so vastly overgrown.

The order in which the different diseases are considered is that followed at St. George's Hospital, and to this the author patiently conforms, after certain preliminary chapters upon the method of diagnosis, the duration and sequence of phenomena, and the general condition of the patient.

In illustration of the style of the work, we take the remarks on Paraplegia, upon which we now chance to open.

"Paraplegia.—Rarely a sudden seizure except after injury of the spine, it is but seldom dependent on cerebral disease; in both respects it stands in complete contrast to hemiplegia. As in hemiplegia, however, the power of movement is generally more affected than the sensibility; but loss of the one seldom exists without partial failure of the other. Its characteristic is that it affects both sides of the body symmetrically, although not necessarily to the same degree. Its history points out its more or less gradual development, the occurrence of some accident or injury to the back, or it may perhaps afford evidence of disease of the brain. It ought always to be ascertained whether there be any deviation from the normal condition of the bones of the spine, or any point at which a sudden jar or blow causes more pain than elsewhere; we have then to consider how high the condition of paralysis extends.

"a. In its most common form, the disease has come on by slow degrees, observed first, perhaps, in one leg, and soon after in the other, and still exhibited to a greater degree in the limb in which it was first felt, but extending no higher than the loins; it has been preceded by no accident, is accompanied by no distortion, and is entirely without pain. The patient at first only feels some weakness in the knees, and very frequently in walking experiences a sensation as if he were treading on soft wool; the muscular sense is soon lost, and he needs to look at his feet to know where he steps; gradually the paralysis increases, and in the worst cases he is at length reduced to such a state that he has no power even to move his limbs in bed except with the assistance of his hands, and yet the upper half of the body is unaffected. This is dependent on a condition of simple atrophy of the lower part of the cord; there is no evidence of inflammation, acute or chronic, during life, no appearance of it after death; nor do the remedies which generally influence the progress of inflammation show any power over this disease.

"b. The form occurring next in frequency is that dependent on injury or disease of the spine—fracture or caries of the bone, and ulceration of the in-

tervertebral cartilage. Displacement following on these causes may of itself give rise to paralysis; but in chronic cases it is seldom found unaccompanied by evidence of inflammatory action: we may, therefore, for all practical purposes, class along with those just mentioned, the paralysis consequent on concussion, which may result at once from the accident, and be perpetuated by inflammation, or may only supervene some time after the injury has been received. Here the diagnosis is generally facilitated by the history of an accident or by the evidence of the displacement which generally accompanies fracture, caries, and ulceration. But it sometimes happens that the ulceration of the intervertebral cartilage sets up inflammation in the membranes of the cord before displacement occurs; and while the pain on movement, and stiffness of the back, are only supposed to be rheumatic, symptoms more or less distinct of this inflammation are developed, and paralysis speedily follows. In such cases accurate diagnosis depends upon the correct appreciation of these symptoms, especially with reference to the seat of previous pain and stiffness; but it must be confessed that the knowledge often comes too late to be of much service in practice.

"c. Idiopathic inflammation of the cord, of itself, as we have seen, a comparatively rare disease, may give rise to symptoms of paralysis under three distinct conditions; they may be only the evidence of further disintegration, and the immediate approach of death; they may remain for a lengthened period in consequence of chronic thickening after the acute symptoms have passed by; or they may arise without any previous acute symptoms—the inflammation from the first presenting only the characters of a subacute or chronic form. An exposure to cold, the occurrence of pain in the back, and the comparative suddenness of the attack, point to a condition different from what has been recognized as the consequence of atrophy. The resulting paralysis is paraplegia, but there is very generally a considerable difference in the degree to which the limbs on each side are palsied.

"d. The pressure of a tumor on some portion of the cord may also give rise to paraplegia: when occurring in the lower region of the back, with no external evidence of its presence, it is not to be distinguished from cases of atrophy; but when the paralysis has come on gradually, when no history of injury is obtained, and no evidence of distortion exists, when the patient is free from pain, and the upper extremities are partially involved as well as the lower, good ground exists for suspecting the existence of this form of disease; when the breathing is also interfered with, its seat is probably at the base of the brain, and it may be expected soon to prove fatal.

"e. Spinal apoplexy is one of the rarest forms of disease of the cord. The symptoms are said to be very much what might have been anticipated from our knowledge of cerebral apoplexy: violent pain in the region of the effusion, general convulsions, sudden paralysis, which, in place of affecting one side of the body, occupies its lower half to an extent determined by the distance of the effusion from the top of the canal: it is generally unaccompanied by coma, and proves speedily fatal.

"f. General paralysis. This is the only form affecting both sides of the body which has its seat in the brain; seldom complete until towards its close it is marked by a general loss of muscular power, an occasional difficulty in articulation, tripping over or stuttering and slurring of one's words, as in the early stages of intoxication. It is seen in its most typical form in the paralysis of the insane, where, along with gradual abolition of the muscular power, there is a corresponding gradual loss of mental consciousness, ending in perfect fatuity; it is usually preceded by symptoms of alienation of mind having more or less the character of exaltation of ideas: the patient imagines that he has acquired an enormous fortune; or the quiet, steady man of business becomes suddenly gay and extravagant; the delusions seem always to have the character of happiness and contentment.

"Pathological anatomy is not yet sufficiently advanced to point out in all such cases what are the actual changes in structure on which the disease depends, the brain being found in very various states after death.

"A corresponding form of disease exists without the accompaniment of

insanity, in which it is also quite impossible to predict the actual lesion that will be discovered; and though in some rare cases no appreciable change of structure can be detected, yet their whole character warrants us in assigning disease of the brain as their cause. The consistency of the affection, its extension to one or other or both of the upper, as well as the lower extremities, makes it probable that the seat of disease is above the spinal column; and, having satisfied ourselves that the vertebræ of the neck are free from disease or distortion, our next step is to analyze with care the condition of the cranial nerves: deafness, unequal action of the pupils, strabismus, &c., are to be taken as evidence of disease in the cranium. It is worthy of remark that, while these nerves are affected only on one side, and one arm is perhaps decidedly weaker than the other, the legs are usually equally paralyzed. The paralysis is sometimes coincident with a condition of spasm which affords pretty conclusive evidence that the disease is situated in the brain itself.

"Its progress is generally very slow, and the failure in muscular power may vary greatly in intensity in different parts of the body, being generally most complete where its existence was first recognized. In the paralysis of the insane, the defect in speech is generally that which is first observed; in other cases this is not so, but its existence is always very important in diagnosis. The absence of any other indication of disease besides loss of power, in some instances, has led to their being mistaken for cases of hysteria or hypochondriasis.

"*g. Paralysis agitans*: although clearly not belonging to the class paraplegia, the few remarks to be made on this disorder will best follow the description of general paralysis. There is no evidence of brain disease; the intellectual faculties are unimpaired, the cranial nerves are not liable to be implicated; indeed it is not proved that its seat is in the nerves themselves, but, like chorea, it consists in some disturbance of the relation between nervous influence and muscular movement; there is no anæsthesia. It is chiefly a disease of old age, comes on gradually with shaking of the head or of the extremities; these are indeed its only diagnostic features; it is occasionally left as the result of convulsions in infancy.

"An analogous disease is seen in the tremor of those subjected to the constant action of mercurial vapor. The tremor, in this case, is only excited by voluntary muscular movement, the individual at other times being perfectly still; and its seat is most probably in the nervous system, as it sometimes presents the phenomena of wakefulness and delirium. It is one of the examples of slow poisoning mentioned in an earlier part of this volume.

"In all the conditions just referred to we are very much at a loss in attempting to explain the relation of the phenomena to change of structure in the nervous system. This difficulty is much increased by the fact that, whatever be the form of lesion, and however local and limited in its nature, we have the same general result of paralysis affecting both sides of the body alike: and therefore practically the important considerations in paraplegia are limited to the recognition of acute and chronic disease, and caries or injury of bone. When any doubt is entertained with regard to the reality of partial paraplegia, it may be always solved by observing with due care the mode in which the feet are set down in attempting to walk: there is an indescribable uncertainty about the gait of a paraplegic which imposture can never successfully imitate."

Prostitution, considered in its Moral, Social and Sanitary Aspects, in London and other Large Cities: with proposals for the mitigation and prevention of its attendant evils. By WILLIAM ACTON, formerly Externe to the Female Venereal Hospital in Paris. (8vo, Churchill, 1857, pp. 189.)

Were we called upon to characterize the age in which we live, we should say it was especially remarkable for the elucidation of great social questions. As pioneers in this social reform, stand prominently forward the members of our profession: and we are much mistaken if the time is not approaching when that great social evil, prostitution, will obtain the notice which the sin of cities demands. To forward that movement will be the aim of the present article,

and our readers may be pleased to possess an epitome of the most recent and interesting treatise which has yet been published.

In the first chapter the author defines what he means by the term prostitution, and there gives us a more comprehensive signification of the term than is usually assigned to it. For the sake of his argument, he concedes, as maintained by many divines and moralists, that all illicit intercourse is prostitution, and that this word is as justly applicable as those of fornication and whoredom to the female who, whether for hire or not, voluntarily surrenders her virtue.

In the second chapter we have the official returns from the police of the numbers of women known to the force as gaining their livelihood by prostitution. These returns, the author acknowledges, can show but a small proportion of the class, as it must include but a small number of those actually leading immoral lives. He places much more dependence upon the census tables and the proportions of children born out of wedlock; by these figures he renders it more than probable that 1 in 13 of unmarried women is a prostitute in the sense of the term above alluded to; and he further calls attention to the extreme youth of the London street-walkers, as compared with those of any other city in Europe.

In speaking of the causes of prostitution, in his fourth chapter, he considers vanity, love of dress, low wages, want of employment for females, the herding of the sexes among the poor, and the training up of so many young women to the position of dressmakers and milliners, instead of as domestic servants,* as the most potent causes in the fall of women. Who can fail to be struck with the truth of the following passage?

"We believe we shall be borne out by the observation of all who have inquired much into the antecedents of this unfortunate class of women—those, at least, who have not sprung from the very low, or the actually vicious sections of the community—in stating that a vast proportion of those who, after passing through the career of kept mistresses, ultimately come upon the town, fall in the first instance from a mere exaggeration and perversion of one of the best qualities of a woman's heart. They yield to desires in which they do not share, from a weak generosity which cannot refuse anything to the passionate entreaties of the man they love. There is in the warm fond heart of woman a strange and sublime unselfishness, which men too commonly discover only to profit by—a positive love of self-sacrifice—an active, so to speak, an aggressive desire to show their affection, by giving up to those who have won it something they hold very dear. It is an unreasoning and dangerous yearning of the spirit, precisely analogous to that which prompts the surrenders and self-tortures of the religious devotee. Both seek to prove their devotion to the idol they have enshrined, by casting down before his altar their richest and most cherished treasures. This is no romantic or over-colored picture; those who deem it so have not known the better portion of the sex, or do not deserve to have known them."

Diseases the result of prostitution forms the heading of the fifth chapter. Here we have a sad and almost incredible statement of the statistics of venereal diseases, which, if we had not all the authority derived from their having been collected within a short time at the different hospitals in London, we might have doubted. For the first time we learn that two out of three of the surgical patients at the Free Hospital have contracted diseases resulting from prostitution. At St. Bartholomew's, the proportions are about one-half; in the army, one in five; in the merchant service, one in five. In speaking of what occurs in private practice, the author remarks:—

"In the first place—the venereal affections now seen in private practice are slight. Patients come to the medical man early. The *mauvaise honte*, which formerly acted to their prejudice, is passing away, and the necessity for immediate treatment generally admitted. To this cause I attribute to a great extent the mildness of the disease, and the rapidity of cure in the majority of cases.

* We were glad to notice that Lord Brougham, in a recent speech at Liverpool, lent the weight of his authority to this cause, and corroborates Mr. Acton's opinion, which he says is too true, and by no means exaggerated.

No doubt can exist that improved treatment and a more correct diagnosis are operating in the same direction; science has been assisted by the almost complete abstinence of the upper classes generally from intoxication, though not from liquor, and the liberal ablutions now so much and so beneficially in fashion.

"The loss of the virile organ is, now-a-days, a thing almost unheard of in private practice. A surgeon might practise in this town for many years without gaining any experience of the affection of the bones of the nose which causes that organ to fall in. It is true that we occasionally meet with an obstinate case of this affection in highly strumous patients, but even these, under appropriate treatment, escape the sad deformity, and ultimately recover. I have, every now and then, cases of tertiary symptoms, which return again and again, and offer most rebellious instances of the virulence of the disease amongst the weak and debilitated; but still death from syphilis is almost unheard of in private practice. I did see one some time ago. It came on gradually from a want of rallying power in the system, and a few tubercles were found in the lungs. It is to be regretted that in the present day the indurated sore is not more rare, attended as it is with many sad sequelæ. Secondary symptoms are not severe, but, although slight, they linger on for months, now better, now worse, until the powers of the system, if well supported, get the better of the affections of the tongue or the eruption on the skin. Rarely, now, are the deeper structures affected, and patients generally, if not very injudiciously treated, completely recover within a reasonable time."

The author has called his sixth chapter "The Modern Harlot's Progress;" and, in our opinion, this is the one that will be most generally read and appreciated. We wish we had space to make longer extracts from it, as on acquaintance with the natural history of the harlot must hinge most of the preventive measures we can reasonably employ to check the evil, maintain her in sound health during the time she is running her career, and taking steps to assist her in her ultimate settlement and withdrawal from vice.

The author begins by stating:—

"It is a little too absurd to tell us that 'the dirty, intoxicated slatterns, in tawdry finery and an inch thick in paint'—long a conventional symbol of prostitution—is a correct figure in the middle of the nineteenth century. If she is not apocryphal, one must at least go out of the beaten path to find her. She is met with, it is true, in filthy taps, resorts of crime, and in the squalid lairs of poverty—rarely courting the light, but lurking in covert spots to catch the reckless, the besotted, and the young of the opposite sex. And though such may be even numbered by hundreds, it must, on reflection, be conceded by those who have walked through the world with open eyes, that considering the square mileage of the metropolis, and the enormous aggregate I am treating of, they are as but drops in the ocean. The Gorgon of the present day against whom we should arm our children should be a woman who, whether sound or diseased, is generally pretty and elegant—oftener painted by Nature than by art—whose predecessors cast away the custom of drunkenness when the gentlemen of England did the same—and on whose backs, as if following the poet's direction, in *corpore vili*, the ministers of fashion exhibit the results of their most egregious experiments."

Who but must acknowledge the truth of the following sketch?

"On the other hand, the sad career in prostitution of the sober-minded woman, in whatever rank she may be, will be marked and affected by that quality. Whatever befall her in this vale of tears, the gentle-minded woman will be gentle still; and with this native hue will be tinged all her dealings with the sisterhood, and with the rough rude males whom ever and anon it is her fate to meet. If fortunate enough to have the acquaintance of some quiet man of means, she will not be puffed up with vain-gloriousness, but seeking comfort in obscurity, and clinging fast to what respect she may gain of others, will profess—what I dare say she really often feels—disgust at brazen impudence, and all the pomps and vanities. Whether this eschewal be from real delicacy, or considerations of economy, or because any sort of notoriety, instead of cementing, as in the case of others mentioned, would be fatal to their particular *liaison*, it is hard to say; but, however that may be, it is no less true

that hundreds of females so constituted are at this moment living within a few miles of Charing Cross, in easy if not elegant circumstances, with every regard to outward decorum and good taste, and shocking none of the public who will not attempt unnecessarily close investigation, but for all that 'in a state of prostitution.' The ease and comparative prosperity that inflates the lighter woman into a public nuisance have no such effect upon such a one as I have spoken of last. They but cause her to prize each day more highly peace and quietness—more sadly to regret the irrecoverable past—more profoundly to yearn after some way out of the wilderness."

The author next combats the popular idea, that the harlot perishes in her career. He shows statistically negative evidence that venereal disease, common as it is, does not kill the prostitute, neither does she commit suicide.

"How then is the disparition," asks the author, "of this class of women to be accounted for, as they are neither stricken down in the practice of harlotry, nor by their own hands, nor by intemperance and venereal disease, nor would seem to perish of supervening evils in any notable proportion? Do they fall by the wayside, as some assume, like leaves of autumn, unnoticed and unnumbered, to be heaped up and to rot? Do unknown graves conceal, not keeping green the lost one's memory, and the obscure fallible records of the pauper burials at last confound all clue and chance of tracing her? Is she filtered again into the world through a reformatory? or does she crawl from the sight of men and the haunts of her fellows to some old homely spot in time to linger and to die?"

"I have every reason to believe, that by far the larger number of women who have resorted to prostitution for a livelihood, return sooner or later to a more or less regular course of life. Before coming to this conclusion I have consulted many likely to be acquainted with their habits, and have founded my belief upon the following data. Whatever be the cause of a female becoming a prostitute, one thing is certain—before she has carried on the trade four years, she has fully comprehended her situation, its horrors and its difficulties, and is prepared to escape, should opportunity present itself. The constant humiliation of all, even of those in the greatest affluence, and the frequent pressure of want attendant on the vocation of the absolute street-walker, clouding the gayety of the kept woman, and driving the wedge of bitter reflection into the intervals of the wildest harlot's frenzy, are the agencies which clear the ranks of all but veterans who seem to thrive in proportion to their age.

"Incumbrances rarely attend the prostitute who flies from the horrors of her position. We must recollect that she has a healthy frame, an excellent constitution, and is in the vigor of life. During her career, she has obtained a knowledge of the world most probably above the situation she was born in. Her return to the hearth of her infancy is for obvious reasons a very rare occurrence. Is it surprising, then, that she would look to the chance of amalgamating with society at large, and make a dash at respectability by a marriage? Thus, to a most surprising, and year by year increasing extent, the better inclined class of prostitutes become the wedded wives of men in every grade of society, from the peerage to the stable, and as they are frequently barren, or have but a few children, there is reason to believe they often live in ease unknown to many women who have never strayed, and on whose unvitiated organization matrimony has entailed the burden of families.

"Others who, as often happens, have been enabled to lay by variable sums of money, work their own reclamation, as established milliners, small shop keepers, and lodging-house keepers, in which capacities they often find kind assistance from *ci-devant* male acquaintances, who are only too glad to second their endeavors. Others, again, devote their energies and their savings to preying in their turn, as keepers or *attachées* of brothels and other disorderly establishments, upon the class of male and female victims they themselves have emerged from.

"The most prudish will doubtless agree with me, that an important fraction of ex-prostitutes may be accounted for in the last of these categories. Such, indeed—as reformatories of the kind hitherto opened have been notoriously

restricted in their operation—has been the customary theoretical disposition of all, or almost all, who were supposed not to die in the ranks or of supervening illnesses. On reflection, too, the reader may, perhaps, acquiesce in some occasional re-entrances into society through the portals of labor. Emigration also, under its present easy conditions, may be admitted to be an outlet to a certain extent."

This termination of the prostitute's career is not a mere matter of indifference to the public; on the contrary, it is of the utmost importance that society should distinctly know if it be true or false. If it be true, the clergy and philanthropists can no longer shut their eyes with indifference to the fate of the unfortunate, or refuse to aid us in endeavoring to amend her position. If it is true, see at once the importance to the woman herself. A new and inspiring future is before her; she will have hope, and philanthropists should not lose an instant in informing her what her prospects really are. Instead of sinking lower and lower, and losing all self-respect, she may now be induced to try her utmost, earlier than she would otherwise do, to regain a position in the world; and in doing so, society cannot but be benefited, for it is well known that we have to dread the worst consequences from the desperate criminal. What a different and hopeful interest must not the public take in the harlot's career, if we have good reason to suppose that the erring sister is not altogether lost! What encouragement for her unfallen but sympathizing sister to help her, if she thinks that her aid will not be thrown away; what consolation it is to know that the reformatory is not alone the only resource to draw her from the paths of vice; what encouragement it is for the surgeon to keep her sound during this "chrysalis state," if she is to become the mother of Englishmen, or the wife of one who, although placed below our own class, is still a producer of our working classes. How pleasant to think that we can do something more than pity the street-walker, and that Providence has tempered the wind to the shorn lamb, although an uncharitable world has heretofore decreed in its worldly code that no sympathy should be wasted on the erring. Truly may it be said, that "L'homme propose, mais Dieu dispose."

In speaking of police supervision, the author at once rebuts the idea of wishing to introduce the foreign system. He alludes fully, however, to the system, pointing out its weak objections, which persons interested may consult with advantage; but shows what part we may copy from our neighbors. He then comes to a section which will be read with great interest; namely, the haunts and homes of prostitutes in London, and proposes a variety of regulations founded on a study of the habits of these women; for we would here remark, that our author describes vice not in the alluring garb that many writers of fiction have done, nor as the "raw head and cross-bones" style of mistaken zeal, but in its every-day dress and aspect, for the purpose of drawing a moral, and inviting those in authority to remedy the most flagrant evils.

As an example, he gives the following description of a French dress-house, commencing:—

"There are probably seven or eight French houses of this description in London, and I have reason to believe that the lodgers of all but two of them are rarely seen plying in the public streets. They are principally recruited by women imported from Paris, after being redeemed from the *maisons tolérées* of that capital by payment of the debts they have contracted. Each woman who under these conditions takes up a residence in England, is already shackled. She is clad by the keeper, who feeds her well, and allows her to enjoy herself in her own manner, perhaps one day a week, but under strict surveillance always, if on no other account, for the sake of the property upon her back. The natural question, 'Why does not this woman escape from this white slavery?' is best answered by other queries—Whither can she fly? What can she do? She speaks no English, and owes money for which she might, and no doubt would, be rigorously persecuted. On the other hand, she has been thoroughly trained as a prostitute perhaps from tender years, and has never regarded herself in any other light than as a chattel; is found in fine clothes, is well fed, and allowed liquor, for which French women here domiciled soon contract a fancy. When used up she will be dismissed to practise for herself,

or, less from charity than to clear the market of her presence, sent back to France."

And again, in speaking of houses in which prostitutes lodge, we have the following account of the women:—

"They are usually during the day, unless called upon by their followers, or employed in dressing, to be found dishevelled, dirty, slipshod and dressing-gowned, in this kitchen, where the mistress keeps her *table-d'hôte*. Stupid from beer, or fractious from gin, they swear and chatter brainless stuff all day, about men and millinery, their own schemes and adventures, and the faults of others of the sisterhood. As a heap of rubbish will ferment, so surely will a number of unvirtuous women deteriorate, whatever their antecedents or good qualities previous to their being herded under the semi-tyranny of a lodging-house keeper of this kind. In such a household, all the projections of decency, modesty, propriety, and conscience must, to preserve harmony and republican equality, be planed down, and the woman hammered out, not by the practice of her profession or the company of men, but by association with her own sex and class, to the dead level of harlotry."

The author describes the dancing-rooms and pleasure-gardens, not to recommend them, but to support his argument that, as long as they are properly conducted, they engender little mischief, little evil, and shield society from evils of a more serious kind. He urges that the younger portion of the population should be better supplied with more rational amusements, and argues that as these resorts of to-day are better than the haunts of the vicious of a former generation, it is by no means impossible that the future may produce something of a yet better class for the recreation of the young, who, although example may do much, cannot be made virtuous by act of Parliament.

We must, however, hasten on to the eighth chapter, "On Sanitary Regulations Abroad and at Home." Here we find a reliable summary of the stringent regulations applied to prostitution in foreign countries, about which so much has been said and so little hitherto understood in this country; and which the author considers would be intolerable among ourselves. He adduces instances to show the little good, if not positive evil, resulting from giving outdoor relief to the prostitute:—

"One, for instance, grievously afflicted, among the number catalogued above, attracted my particular notice by the superiority of her dress. She lived, she said, in her own lodgings in a street near the Strand. It is therefore clear she had no home to look to but the streets unless she paid her rent. In the course of the very same evening I was shocked to see this woman, accompanied by another, soliciting (as the Act of Parliament has it) in the street, and to reflect how frightfully she must contaminate any unfortunate man who might yield to her desperate entreaties. In dress and bearing she was by no means a female of the lowest class. No ordinary observer would have recognized her sanitary condition; but there she was—her rent, her food, her clothes to be earned—obliged to drink intoxicating liquor with every man who might offer it, dangerous alike to gentle and simple, the fast young man, or the tipsy father of a family who might be attracted by her pleasing face, and utterly heedless how much she was protracting, perhaps aggravating, her own sufferings. How comparatively futile our morning labors! how inefficacious the eleemosynary drugs!

"Advocates of the 'know-nothing' system, stand aghast! and ask yourselves if the toleration by society of this emissary of death in the attitude in which I saw her is reconcilable with society's duties (if duties it has) to God or man.

"Here you see a woman who, patched up by voluntary charity in the morning, knows no other way—nay, whose only possible resource—to get her necessary food, or bed at night, is to sally forth into the streets. The ministers of charity eased her pain this morning; they dressed her sores and gave her drugs. So they will again next Thursday. She may be worse then, or she may have made a little progress in spite of her drinking and her fornication. But in a month she will be no nearer soundness than had she been taken care of by the State within the walls of our hospital for one week; and within that month what a scourge upon society will the surgeons not have kept about by

their exertions! Here is the power of charity again working to waste. I will not insult you by supposing that you would have had that creature, and the hundreds of whom she is the example, spurned from the gates of every work-house and hospital, and kicked from every domicile in the name of religion, to perish how and where they might by lingering loathsome disease. That were too absurd. But what you do, virtually, is this: You who, if your principles have any worth in them, should protest against the Lock Hospital, proclaim the foul ward a misappropriation, and excommunicate all who relieve or sympathize with the venereal pariah—you neither protest, nor proclaim, nor excommunicate. You testify against none of these things on principle, but only against their extension—against exchanging for a useful flame that inefficient rushlight of private charity which now serves only to make misery visible.”

It would take more space than we have at our disposal to enter upon the amelioration proposed for our hospitals, and we must content ourselves with a single quotation more:—

“It has, then, been thought desirable, from sanitary considerations, that every female exposing herself to the risk of contracting contagious diseases, should be advised to subscribe,* during her state of health and prosperity, to a self-supporting club; so that, when suffering from any affection whatsoever, incidental or not incidental to her vocation, she might in virtue and right of her own payments, ensure the remuneration of any qualified practitioner she may select, as well as an allowance while under treatment.

“It is therefore proposed that—under whatever patronage might be forthcoming—a working Committee, in the first instance by preference, of medical men—knowing, as they best of all men do, the destitution to which disease rapidly reduces crowds of heedless, ignorant, dissipated females, and the danger to others such too often bear about them—should be invited, on behalf of society at large, and in the interest of the women themselves, first to organize, and then to introduce to the public, the scheme of such an association as I have shadowed forth.

“My proposal, in fact, stripped of all worldly superfluities, is to extend for the first time the advantages of Friendly Societies and Benefit Clubs to an order of women, whom I need not further characterize, but whom few will not admit to bear most important relations to society. I believe that, like their betters, they would soon learn and come to acknowledge the advantages of union, and would show the world that their proverbial improvidence mainly arises from their not being initiated into the practice and the value of thrift.

“The idea that such an institution would induce one woman more to enter upon sinfulness, will not for a moment bear the light of reason. It holds out no allurements of impunity, and providence was never an inducement to vice. But the plan will, I hope, on the contrary, enable many a poor creature who now is struggling in the waters of sin and misery, to rise once and again to the surface. I may say to the advocates of reformatories and nothing but reformatories, that the primary object of this Club would not be reformation or proselytism; it would be Christian charity towards the fallen, and Christian charity is the handmaid of religion. You must soften the steel before you can mould it; you must get in somehow the thin end of the wedge. A member of such an institution, though she were case-hardened as steel, must be something softened by the novel sense of unmercenary sympathy and consideration in the time of her sickness and trouble. But we would have no hand in the conversion of the prodigal. We would leave that to the Church, whose fitting

* I feel that his inviting women to subscribe is the weak point of the whole system, so much so that I have been over and over again on the point of giving up the notion. It must instinctively be repugnant to every well-regulated mind to be instrumental in collecting money that is the wages of sin—the reward of iniquity. Could I have devised any other plan, willingly would I have done so. If the State, as I believe is its duty, or the public, undertook the foundation and maintenance of special hospitals, these words need not have been written. But as such institutions do not seem forthcoming from either source, I am forced back upon this proposal of co-operation; and have silenced my own doubts by the argument, that the direction of the wages of sin towards the salvation of the sinner, is more than enough to sanctify their handling.”

office it is, and be content with rejoicing that we had been her harbingers and her pioneers—that we had opened the way to the heart and conscience, where she stood aghast at the work.”

England and France before Sebastopol, looked at from a Medical point of view.
By CHARLES BRYCE, M. D. (8vo, London, Churchill, 1857.)

The medical history of the Crimean war has still to be written. Materials for the formation of a history are, however, gradually accumulating; and Dr. Bryce has contributed certain highly interesting items of information respecting the comparative losses of the British and French armies before Sebastopol, and the sanitary condition of the French hospitals and camp.

Comparative strength and losses of the British and French armies.—The following statement of the number of British soldiers (non-commissioned officers and men) sent to the East during the Crimean war, and of the losses occasioned by death and invaliding, are derived from a return furnished to Dr. Bryce by the Director-General of the Army Medical Department:—

The total strength of the British force of soldiers, exclusive of officers, originally embarked for the East, and added during the progress of the war, up to the date of evacuation of Crimea	93,959
Reduced by deaths, killed in action (2658), and died of wounds	4,446
Reduced from disease	16,298
Reduced by invaliding	12,903
	<hr/> 33,647
Remaining effective strength of Crimean army, non-combatants exclusive, at close of war	60,312
Ratio of deaths to strength, exclusive of killed in action	19.22 per cent.
Ratio of deaths to strength, inclusive of killed in action	22.7 “
Ratio invalided to strength	17.34 “
Total <i>hors de combat</i> at close of war	35.82 “
Total force restored to England and colonies	64.18 “

In the “*Moniteur*” of the 23d October last, there is published, by command of the Emperor, to whom it was addressed, “*un rapport remarquable*,” comprising the “*personnel, matériel, et moyens maritimes*” of the war, prepared by Marshal Vaillant. This document represents—

The effective of the French troops embarked for the East (envois de troupes)	309,268
Reduced by death from all causes, killed in action included (total des pertes de l'armée constatées)	69,229
Invalided singly, and allowed leave on furlough, during the war	65,069
Recalled during the war	20,390
Unaccounted for (disparus)	1,781
Total number returned to France and Algiers	227,135
Ditto, after signature of peace	141,676

Summary.

Taken to the East	309,268
Lost there	69,299
	<hr/> 240,039
Re-entered France and Algeria	227,135
Difference	<hr/> 12,904
Ratio of deaths and <i>disparus</i> to strength	22.99 per cent.
“ of invalids, as above, to strength	21.4 “
“ <i>hors de combat</i> (<i>différence</i> exclusive)	44.3 “
“ of troops in the East at close of war (“ <i>l'effectif de l'armée</i> ,” 30 Mars, 146,240)	47.28 “

By placing the numbers quoted in closer juxtaposition, we find the following percentage results :—

ARMIES.	DIMINUTION OF STRENGTH.		Hors de combat.	Troops in the east at close of war.
	By deaths.	Invaliding.		
English . . .	22.7	17.34	35.82	64.18
French . . .	22.99	21.4	44.3	47.28

Certain anomalies and misleading phrases in the French report require pointing out. “ (1.) By effective strength (*l’effectif*) is usually meant soldiers fit for immediate active service. But in this category are numbered the ambulance sick in the Crimea on the 30th March, who, according to M. Baudens (*Revue des deux Mondes*, 1^{er} Juin, 1857), amounted to 19,648 in the preceding month; besides the above, 10,448 under treatment in hospitals on the Bosphorus, on the very day when the report calls them effectives. By this means the War Minister augments his numerical belligerent force by upwards of 30,000 nominally effective troops; and so makes it appear that 93.44 per cent. of the Crimean army was restored to France after the signature of peace in a fit condition to have continued active hostilities—a demonstrable fallacy. (2.) 15,000 troops, collected in the regimental sick depots outside Constantinople and elsewhere, are similarly designated and registered. (3.) The ministerial reporter allows himself a margin of 12,400 men not specifically accounted for. With regard to this rather considerable *item*, being, in the phraseology of the report, *une différence entre les envois de troupes et des hommes revenus de l’armée*, it is obscurely explained that the number is made up in part of persons subsequently disrated as soldiers, though so classed and counted on embarkation; and in part of others who, returning from and proceeding to the East oftener than once, were in consequence reckoned as multiples of a single individual, and thus to an indefinite degree enhancing the paper strength of the army. . . . Another strange avowal for a military return is, that 1780 men have unaccountably disappeared—*disparus*. They are added to the total loss, but no records vouch for the time, place, or manner of their deaths. Hence it is obvious the impossibility of making a really just and useful comparison between the losses by deaths sustained by the two armies respectively—the terms and elements of calculation furnished by each not being equivalent.” pp. 18—20.

“A scrupulous collation of published and private *data* justifies me in submitting as the lowest summary of French losses for—

“ Deaths—killed in action	8,750
“ ambulance service, from wounds and disease	31,000
“ Constantinople hospitals	32,000
“ Dobrudscha expedition	6,000
“ on passage from Crimea to Constantinople	7,500
“ Gallipoli, Varna, and elsewhere	3,000
“ of invalids on passage from Turkey to France; and of sick and invalids, ditto, on evacuation of Crimea	5,000

93,250.”—p. 34.

The French Hospitals on the Bosphorus.—With the exception of the *Hôpital de Palais de l’Ambassade Russe*, devoted solely to sick officers, the sanitary condition of the French hospitals on the Bosphorus, during the spring of 1856, was very foul. At the commencement of the war, the general state of the French hospitals was good, but the accommodation, although very extensive, proved insufficient for the immense amount of sickness which prevailed in the French army during the winter of 1856 and subsequent spring. Except in the

solitary instance mentioned, the hospitals were overcrowded, the wards and corridors were exceedingly filthy, and the atmosphere was surcharged with foul effluvia from open bed-pans, badly constructed latrines, and insufficient ventilation. Moreover, the medical staff was far too small for the ordinary requirements of the patients; the bed clothing and bedding was deficient in quantity; there were no sufficient means for washing the patients' linen; and the food was not generous enough for patients who were prostrated by formidable zymotic diseases, while suffering, almost without exception, from scurvy.

The prevailing diseases in the hospital were remarkable for their epidemic character. Typhus, dysentery, and hospital gangrene abounded, the first-named disease being peculiarly prevalent.

The loss of life in the medical staff was almost unparalleled in hospital service. Forty-six surgeons died at Constantinople from typhus alone, and scarcely a member of the staff escaped an attack of the disease.

The French surgeon "is not answerable for the cleanliness of the sick, beds, wards, &c., and of the *dépendances de l'établissement*, all of which duties belong à l'officier comptable d'administration." The surgeon, also, is debarred from ordering articles of diet not contained in the ordinary diet scale (which is far from being a generous one), and should he venture to order "extras," it is at the risk of their cost being deducted from his pay.

Sanitary condition of the French camp and outbreak of typhus.—The French soldier in the Crimea, it is now notorious, passed the last six months under circumstances unfavorable to health—namely, overcrowding in mud-floored tents or earth-pits, surrounded by, and immersed in, deleterious exhalations from a soil sodden with animal and vegetable matters of all kinds; its surface being everywhere covered with indescribable filth, and its depths impregnated with the putrescence of tens of thousands of human and bestial bodies. The severity of the season kept the men closely huddled under shelter, every possible entrance of cold air patched up, smoking and cardplaying their only pastime, themselves the while disengaging fresh and augmenting old miasmatic elements of disease. But there was superadded to these evils of habitation another morbid condition, which much intensified their virulence, moral and physical—the insufficiency, namely, of wholesome food, as proved by the extraordinary violence of scurvy in the camp. Scarcely a Crimean soldier has been (April 1856), received into these hospitals since September in whom this sure evidence of noxious nutriment has not been unequivocally manifested.

It is not necessary to argue that a human being placed in these unnatural circumstances not only quickly loses his inherent conservative power to resist poisonous impregnation from without, but contracts, on the contrary, a susceptibility to receive specific disease; particularly when to these abnormal states are conjoined, as was the case here, improper clothing for day and night use; witness the terrible amount of frost-bites,* the excessive bodily fatigue, the disquiets and sorrows of camp-life, hopes deferred, expectations destroyed.

It cannot be doubted nor denied that a vast proportion of the Crimean army was subjected to all these injurious influences last winter.

But while the French regimental surgeon thinks he perceives in the above conditions enough to satisfy any one as to the original source of the prevailing fever (typhus), the ambulance medical officer steps forward to explain its subsequent pestilential sweep and deadliness. This he does by contributing to our hygienic knowledge his personal experience of the real conditions of the places whither patients were taken for medical treatment on being seized with sickness. Take, for example, an original pen-picture of the Kamiesch ambulance, drawn by one who superintended its professional services. It consisted of forty wooden sheds, and fifteen to twenty tents. The former were designed to hold 26, the latter 8, though these numbers were frequently greater. The sheds, about 36 feet long, 18 feet broad, and 8 feet in height, gave a breathing space of 250 cubic feet to each inmate. There was a doorway only at one end, where also were placed the only means of ventilation and light.

* Frost-bite cases admitted into the hospitals: January, 1073; February, 990; March, 598 (official).

One stove burning green wood or charcoal supplied some warmth; the floors were unboarded. The bedsteads were the *lits de camp*, designed to accommodate two persons, on which a *palliasse* was laid. The bed furniture consisted, sometimes of two blankets, commonly only of one, and a single coverlet; no sheets; neither straw of beds, nor tick, nor blankets, were changed for several months.

The first two requirements of an ambulance, namely, washing and drying-sheds, were never provided, and foul body-clothes were cast aside and left uncleansed. When sick and convalescent left hospital, they were supplied with the necessaries nearest at hand. When a fever, diarrhoea, or scorbutic case, was taken to the dead-house, the vacated bed was forthwith occupied by the first fresh admission. The only preparation made for his reception was to wring dry and shake the lower blanket, and substitute the upper one in its place. The same proceeding to be repeated *pro re nata*. The sick tents were in no better condition as respects bedding and beds, and worse in regard to wet, cold, and wretchedness.

Of such-like ambulances there were fourteen during January, February, and March, each constantly containing from 800 to 1100 patients; the average deaths in each of them, on the authority just quoted, were from 20 to 25 daily, making an aggregate loss by death from disease alone, for this period, of at least 25,000 men, of whom five-sixths were cases of fever. (Other than medical authority augment this estimate of mortality by one-fourth.)

Typhus was prevalent in the French army during the winter of 1854-55. In the subsequent summer and autumn the disease lost some of its intensity, but during the winter of 1855-56 it broke out with extraordinary virulence under the conditions described.

In the typhus studied in the French hospitals, as elsewhere, there was present the characteristic maculæ and petechiæ, very distinguishable from the rose-colored papulæ of typhoid fever. In the former there was absent the abdominal symptoms so prominent and almost pathognomonic of the latter. Equally absent were the anatomic lesions which constitute the character of simple continued fever, namely, morbid states of the intestinal follicles, mesenteric ganglions, and spleen. Moreover, the identity of our home-bred typhus with the typhus of the French camp was shown—(1) in both having their origin and development under the influences of the same concurrent causes, which are, overcrowding, accumulation of filth, starvation, and wretchedness; (2) in both having the like modes of attack, the same characteristic eruptions, similar incidental complications, running a parallel course, and presenting analogous critical phenomena; lastly, in both being potentially infectious, and essentially functional disorders; that is, communicable by human intercourse, and having an existence independent of, and being capable of proving fatal without, any appreciable local or structural lesion." (p. 108.)

"Official returns admit of a mortality of 1 in 7 of the typhus cases. I have grounds for believing that this is an understatement. . . . To estimate the deaths from typhus at four fifths of the aggregate mortality is believed moderate." (pp. 116-17.)

II.

REPORT ON THE PROGRESS OF SURGERY.

On Senile Gangrene. By Mr. EDWIN LEE, Surgeon to King's College Hospital.
(*"Medico-Chirurgical Review,"* July, 1857.)

"Disease of the arteries," says Mr. Lee, "has very generally been considered as a cause of mortification, and the diseased conditions have by most authors been attributed to inflammation of the arterial coats. Earthy concretions, for instance, in the arteries of the lower extremities, since first noticed by Cowper and Naish, have been regarded as the cause of the closure of the arterial canals, and of the consequent mortification of the extremities. But, as is observed by Mr. Hodgson, 'our knowledge of the power of the collateral circulation in every part of the body will not allow us to admit the obliteration of the trunks as a sufficient cause of mortification from a deficient supply of blood.' Some other cause of this kind of mortification had then to be sought, and a sufficient one was thought by some writers to have been found in the theory, that if the large arteries were diseased, the small ones would be so also; while others have supposed that the want of elasticity and organic power would interfere with the due supply of blood, in a degree sufficient to account for the effects observed in gangrene. Both these suppositions are entirely devoid of proof; for although in cases of dry gangrene the arteries are often found to contain bony deposits, and the smaller arteries are also sometimes found diseased, yet are these deposits not found in those situations in which the gangrene actually takes place—for instance, in the pulpy vascular extremities of the toes, in the lips, cheeks, or lobes of the ears. In the arteries of the size here found is there never any bony deposit detected? That gangrene is not necessarily connected with disease of the arteries, is proved by the fact that it often occurs when no such disease is suspected. And, on the other hand, M. Cruveilhier has shown* that an artery which supplies a limb may be obstructed for a very considerable distance without any mortification following. If, however, an irritating injection be thrown into such an artery, mortification may readily be produced. It is remarkable that secondary mortification seldom attacks those structures which have a scanty supply of arterial blood, but that it almost invariably shows itself first in those parts which have the largest supply of blood-vessels. The vascular cheeks and lips in children, the vascular extremities of the toes in those in advanced age, are parts very frequently affected. If a simple deficient supply of blood were the cause of mortification, in such cases we should expect to find it first developing itself in the tendons and ligaments, and we should anticipate that the cellular tissue would perish always before the skin. The reverse of all this in secondary forms of mortification ordinarily occurs. The parts in which mortification in general shows itself have in truth a wonderful power of sustaining their life with a very small supply of arterial blood, and for a short time even when separated from the body. This fact is amply illustrated by the way in which portions of skin may be actually severed from the fingers and reunited, or by the length of time that a flap of skin taken from the forehead will maintain its life when converted into an artificial nose. In a case recently under the author's care, a flap of

* *"Anatomie Pathologique,"* vol. ii. p. 301.

skin was taken from the side of the chest and placed across the neck in the centre of the cicatrix of a burn. It appeared to unite favorably in its new position, when the patient suddenly got into very bad health. The old cicatrix ulcerated, and left the portion of skin newly introduced attached by a small base, peninsulated. This portion of skin, however, remained unaffected by the ulceration, and ultimately reunited to the skin of the old cicatrix. In such cases, the arterial impulse through the transplanted portions of skin must be very slight; and in the face of such well known facts, the want of arterial impulse can hardly be seriously maintained as a sufficient cause in itself for mortification. When a portion of skin is frozen, it turns white; and when great heat is suddenly applied, it does the same. Strong nitric acid placed on the surface of the skin or of the mucous membrane, will leave the centre of the slough which results of a dirty white color. In these instances, it is reasonable to imagine that there may be an actual want of blood in the affected part. In some cases of spontaneous gangrene, the same may in all probability happen. But in these latter cases, which are comparatively very few in number, some unusual obstruction to the transmission of the blood through the arteries has generally been manifest; and it may fairly be presumed, from the want of pulsation in the arteries, and from the coldness of the affected part, and other symptoms, that in these cases of mortification a deficient supply of arterial blood was a principal cause of the mortification.

"In the vast majority of instances the parts affected with gangrene afford the strongest contrast to such appearances. The mortified part is commonly of a deep livid color, evidently surcharged with blood, which it has not the power to propel. This is equally true, whether there be a mechanical cause to the return of the blood, or whether no such apparent cause exist. In either case, the deep livid congestion precedes mortification—a condition quite compatible with obstructed circulation in the affected part, but utterly inconsistent with a deficient supply of blood. But, it will be asked, do not the cases in which a ligature has been applied to an artery in cases of aneurism, show that obstruction to the flow of blood through a large artery is often followed by mortification in the limb which it supplies? To this it must be replied, that it is a remarkable fact that mortification, in such cases, has only occurred when the ligature has been placed between the aneurism and the heart, and where, consequently, any softened fibrin or other morbid products which the aneurismal sac may have contained, have had an opportunity of becoming mixed with the blood of the limb upon the distal side of the ligature, and of producing their effects upon the nutrition of the parts there situated. Upon this subject we need only observe at present, that in thirty-three cases of aneurism collected by Paul Broca,* where the ligature was placed on the distal side of the sac, no instance of mortification occurred."

Having reason to doubt the correctness of the theory, that mortification is very generally to be ascribed to the blocking up of the arterial tubes by inflammatory effusion from the lining membrane, Mr. Lee entered upon some researches which led him to the conclusion previously arrived at by Virchow, that while the lining membrane of the arteries remains entire, no inflammatory effusion of lymph can take place from its free surface. He found, also, as Virchow did, that mechanical and chemical irritants, when applied to blood-vessels, produce their effect only, as far as any inflammatory exudation is concerned, on the internal and middle coats of arteries, or the outer coats of veins; and that the epithelial and fibrous longitudinal coats of bloodvessels may become detached, and when once detached, a plastic layer from the outer coats may be poured into their cavities.

"If, then," Mr. Lee asks, "we find that fibrin deposited in the heart may undergo a process of softening, and may then be conveyed in the course of the circulation to arteries of the smallest as well as of the largest diameter, and may there lodge, producing softening of the surrounding tissues, or even mortification, what must we suppose to be the result of similar changes when they originate in the arteries themselves?"

* "*Des Aneurysmes et de leur Traitement*," 1856.

"Fibrinous deposits not unfrequently form in diseased arteries, and may here, as elsewhere, undergo the process of softening. The product of this softening then, together with the *débris* of the internal coat of the artery, and the softened atheromatous deposit, are carried along the course of the circulation, until arrested in the smaller tubes, or in the actual substance of organs. Wherever they stop, other changes occur. In some cases the fibrin, still retaining some consistency, and adhering in its new bed, may become absorbed, and cause a puckering and contraction of surrounding parts. Nearly all arteries that have thus been obstructed have been found contracted after a certain time. This is so generally the case, that Professor Tiedemann, in describing this disease, has assumed for his title, *Arctation and closure of the arteries*. In general, however, post-mortem examinations reveal that softening, accompanied by cell-development, has taken place in portions of fibrin that have been stopped in their course. When this occurs in a bloodvessel, it produces inflammation of its outer coats and neighboring tissues; when in the structure of organs, it is accompanied by softening of the surrounding parts. If we find, then, as the result of disease of the arteries, that morbid materials find their way into the blood, and produce a separation of fibro-albuminous deposits which in their ulterior changes are liable to poison the different organs to which they are conveyed in the acute forms now noticed, we are led farther to inquire whether there are any chronic forms of the same affection. In cases of long-standing disease of the arteries, the products of morbid deposits between their coats, which have undergone the process of softening, must constantly pass into the circulation, as must also any portions of liquefied fibrin which have temporarily adhered to those parts where the lining membrane has given way. If the quantity of morbid deposit or of liquefied fibrin be small, it is probably disposed of without any great inconvenience, but when larger it would appear that the contaminated blood has a tendency to lodge in the substance of the first organ to which it is conveyed. In parts where the circulation is vigorous, the impediment may probably be readily overcome, but in those parts in which the circulation is more languid (although perhaps they may contain a large quantity of blood), there we find the injurious effects produced. Now, these are exactly the conditions in which senile gangrene ordinarily occurs. A diseased artery gradually but constantly pours the product of fatty degeneration into the blood which is conveyed to the most distant and dependent part of the circulation. The excessive pain coincides with that which experiment proves to be the result of the injection of arteries with fluids which do not readily pass into the veins. The skin, which contains the largest amount of blood, and, therefore, the largest quantity of the morbid material, perishes first; and in succession the cellular membrane, bone, tendon, and ligament. If this be the true pathology of dry gangrene, it explains at once how futile amputation is likely to be while the original source of disease remains in the form of fatty degeneration of the artery supplying the limb. It explains also why opium and tonics are found to agree so much better than the antiphlogistic plan formerly recommended by Dupuytren. Finally, it explains how, when the morbid material which produces the gangrene ceases to be supplied, the patient may recover, as in case No. III."

The practical idea which suggests itself from these considerations is—

"That a diseased or partially obstructed artery may be more dangerous to a patient's welfare than one which is completely closed. The blood, in the case of the obliteration of the main trunk, would probably be conveyed to the extremity in diminished quantity, but flowing through collateral and comparatively undiseased channels, it would be more free from the admixture of any morbid matter which it might receive in its passage through the limb.

"A greater danger may therefore arise to a limb from the principal artery being partially or temporarily obstructed, than from its complete and permanent obliteration. This point is illustrated by the following case, taken from Dr. Oldham's notes, and for which I am indebted to Mr. Birkett, of Guy's Hospital:—

"CASE.—A very tall, healthy, muscular, and robust Scotch peasant, thirty years of age, was admitted into Guy's Hospital on the 15th of August, 1856.

for a popliteal aneurism. On the 17th of August a 'temporary ligature' was applied to the femoral artery. The ligature was removed at the expiration of seventy-two hours. For the next four days everything appeared satisfactory, when on the morning of the 25th of August a small dusky spot was observed by Mr. Birkett on the dorsum of the foot. This spot increased, and it was evident that mortification had commenced. During the course of the day some hemorrhage took place from the situation of the temporary ligature. This again recurred on the following day, August 26th, when amputation of the thigh was performed."

"Whether the partial and temporary obstruction to arteries by pressure in cases of aneurism is liable to be followed by any similar accidents to those attending upon the temporary ligature, experience has yet to decide. Three instances have lately come under the author's notice in which mortification of the leg followed the treatment of a popliteal aneurism by pressure. In two of these cases the femoral artery was at length tied, and before the mortification had apparently commenced."

On the hereditary transmission of tendencies to cancerous and other tumors. By JAMES PAGET, F. R. S., Assistant-Surgeon to St. Bartholomew's Hospital. ("Med. Times and Gaz.," Aug. 22, 1857.)

With a view to the settlement of some questions concerning the hereditary transmission of cancerous and other diseases, Mr. Paget has embodied the results of 411 cases, falling under his own notice, in which he has noted whether the patients or their friends, did or did not know of tumors of any kind having occurred among their blood relations of the same or former generations. These results are given in four tables:—

TABLE I.

KINDS OF TUMORS.	Total number of cases.	Patients of whose relatives some were known to have tumors.	Patients of whose relatives none were known to have tumors.
Serous and other barren cysts	16	2	14
Glandular proliferous cysts	2	—	2
Cutaneous epidermal and sebaceous cysts	19	9	10
Fatty tumors	19	4	15
Fibro-cellular tumors and cutaneous out-growths	5	—	5
Painful subcutaneous tumors	4	—	4
Fibrous tumors (not uterine)	17	—	17
Cartilaginous tumors	12	2	10
Cartilaginous and glandular tumors	9	1	8
Myeloid tumors	4	—	4
Osseous tumors	7	3	4
Mammary glandular tumors	23	5	18
Prostatic and other glandular tumors	4	1.	3
Venous and arterial tumors (in adults)	6	—	6
	147	27	120
Recurring glandular proliferous cysts	1	—	1
Recurring fibroid and fibro-cellular tumors	7	3	4
Recurring cartilaginous tumors	1	—	1
Recurring mammary glandular tumors	1	1	—
	10	4	6
Scirrhus cancers	129	35	94
Medullary cancers	46	9	37
Epithelial cancers	65	13	52
Melanoid, osteoid, and colloid cancers	14	—	11
	254	60	194

TABLE II.—*Cases of Patients with Innocent Tumors, who had Relatives with Tumors.*

No. of case.	Patient's disease.	Relatives that had tumors.	Nature of the tumors in the relatives.
1	Cystic dilatation of mammary ducts	Mother	Cancer of the breast
2	Cyst in the breast	Mother	Fungoid disease
3	Sebaceous scalp-cyst	Father; sister	Similar cysts in same part
4	Epidermal scalp-cyst	Mother	Similar cyst in same part
5	Epidermal scalp-cyst and epidermal tumor on the sacrum	Mother; grand-mother	Wens on the head
6	Epidermal cyst in the neck	Father's brother; Grandmother	Tumor in same part Died with a tumor
7	Cutaneous scalp-cyst	Mother	Similar cyst in the same part
8	Epidermal scalp-cysts	One or more relatives	Similar cysts
9	Cutaneous scalp-cysts	Father and two of his brothers	Cancer of the liver
10	Cutaneous cyst and horn in the leg	Father's brother	Cancer
11	Cutaneous scalp-cysts	Mother; two sisters	Similar cysts in same part
12	Fatty tumor on the front of the neck	Mother	Similar tumor in the back of the neck
13	Fatty tumor on the shoulder	Aunt, and probably mother	Cancer of the breast
14	Fatty tumor over the clavicle	Mother Aunt	Cyst, probably bursal, on shoulder Cartilaginous and glandular tumor
15	Fatty growth on the nape	Father	Similar growth
16	Cartilaginous tumor in the pelvis	Father	Ossified cartilaginous tumor of the radius
17	Soft cartilaginous tumors on chest and forehead	Mother	Cancer of the breast
18	Cartilaginous and glandular tumor over parotid	Grandmother	Cancer of the breast
19	Numerous bony tumors on bones	Father	Similar tumors
20	Bony tumor in the orbit	Grandmother	Wen on the neck and a soft tumor on head
21	Bony tumor on the mastoid process	Father	A tumor removed from his thigh
22	Mammary glandular tumor	Cousin	Nasal polypus
23	Mammary glandular tumor	Sister	Probably a similar tumor
24	Mammary glandular tumor	Sister	A tumor removed from the shoulder, not cancerous
25	Mammary glandular tumors in both breasts	Mother; Grandfather	Cancer of the breast Cancer of the face
26	Mammary glandular tumor	Aunt	Cancer of the breast
27	Glandular tumor over the parotid	Father; First cousin	Tumor in the cheek Cancer of the breast

TABLE III.—*Cases of Patients with Cancerous tumors, who had Relatives with Cancerous or other Tumors.*

No. of case.	Patient's disease.	Relatives that had tumors.	Nature of the tumors in the relatives.
1	Scirrhus cancer of breast	Cousin	Cancer of the breast
2	Ditto and a mammary glandular tumor in same	Grandmother	Ditto
3	Scirrhus cancer of breast	Sister	Ditto
4	Ditto	Mother	Ditto
5	Ditto	Mother; sister	Ditto
6	Ditto	Mother	Ditto
7	Ditto	Mother; sister	Ditto
8	Ditto	Mother's uncle	Cancer of the lip
9	Ditto	First cousin	Ditto of the womb
		First cousin	Ditto of the lip
10	Ditto	Mother's sister; mother's first cousin	Ditto of the breast
11	Ditto (Male)	Mother	Ditto
12	Ditto	Sister	Ditto
13	Ditto	Father's mother; father's sister	Ditto
14	Ditto	Father's sister; father's cousin	Ditto
15	Ditto	Mother	Ditto
16	Ditto	Brother	Cancer of the eye
17	Ditto	Sister	Ditto of the breast
18	Ditto	Sister	Ditto
19	Ditto	Grandmother	Ditto
20	Ditto	Mother	Ditto
21	Ditto	Mother's aunt	Ditto
22	Cancer of axillary glands	Sister	Ditto
23	Scirrhus cancer of breast	Mother	Internal cancer
24	Ditto	Sister	Cancer of the breast
25	Ditto	Sister	Ditto
26	Ditto	Mother	Ditto
27	Ditto	Sister	Ditto
28	Ditto	Grandmother	Ditto
29	Ditto	First cousin	Ditto
30	Ditto	Mother's sister	Ditto
31	Ditto	Aunt	Ditto
32	Ditto	Mother; aunt	"Cancerous"
33	Ditto	Great-aunt	Cancer of the breast
34	Ditto	Two cousins of her father and one of their daughters	Cancers
35	Ditto	Mother	Cancer
36	Medullary cancer of great toe	Mother's father; Father	Similar disease
		Sister	Cancer of the lip
37	Medullary cancer of one breast; scirrhus cancer of the other	Sister	Scirrhus cancer of the breast
38	Medullary cancer of breast	Mother; Uncle	Cancer of the womb
39	Ditto of the jaw	Mother	Cancer of the face
40	Ditto of the femur	Father	Cancer of the breast
41	Medullary subcutaneous cancers	Second cousin	Great cancer of the face
42	Medullary cancer over the parotid	Father; Uncle	Epithelial cancer of the face
43	Ditto of cervical glands	Father	Tumor of twenty years' duration below the jaw
44	Ditto of the breast	Mother; sister	Epidermal cyst
45	Epithelial cancer of the lip	Mother	"Tumor in his inside; fatal"
			Cancers of the breast
			Tumor removed from or with the breast twenty years before death
46	Ditto of the labia, &c.	Sister; father's sister; mother's brother's daughter	Cancer of the breast

TABLE III.—(continued.)

No. of case.	Patient's disease.	Relatives that had tumors.	Nature of the tumors in the relatives.
47	Epithelial cancer of the lip	Grandmother	Cancer of the breast
48	Ditto (? soot) of the larynx	Brother	Epithelial soot-cancer of the scrotum
49	Ditto of the cheek	Aunt	Cancer of the breast
50	Ditto (? soot) of scrotum	Half-brother	Cancer (? soot) of the penis
51	Ditto of the tongue	Great-aunt	Cancer of the throat
52	Ditto of the conjunctiva	Sister	Cancer of the breast
53	Ditto of the nose and face	Second cousin	Medullary subcutaneous cancers
54	Ditto of the tongue	Father	Cancer of the lung
55	Ditto (? soot) of the eyelid	Brother	Soot cancer of scrotum
56	Cancer (probably epithelial) of the tongue	Sister	Cancer of the breast
57	Ditto (? epithelial) in the pharynx	Mother's father, aunt, and grand-mother	Cancer
58	Melanoid cancer of foot	Great-grandmother	Cancer of the breast
59	Ditto in the scalp, &c.	Mother	Cancer at the base of the brain
60	Ditto in the shoulder, &c.	Mother	Cancer of the face, &c.

TABLE IV.—Cases of Patients with Recurring Tumors, who had Relatives with Tumors.

No. of case.	Patient's disease.	Relatives that had tumors.	Nature of the tumors in the relatives.
1	Recurring fibro-cellular tumor in the thigh	Mother; sister	Cancers
2	Recurring fibroid tumor in the leg	Brother	Cancer of the lung
3	Recurring fibroid tumor in the thigh	Father	Cancer of the tongue
4	Recurring mammary glandular tumor	Mother, Sister, Others	Cancer of the breast Fungoid disease Cancers (probably)

Mr. Paget's summary of these tables, and the inferences he draws from them, are as follows:—

"The first table shows that of the 411 patients, 254 had cancerous, *alias* malignant, tumors; 147 had non-cancerous, *alias* innocent, tumors; and 10 had non-cancerous, but recurring, tumors.

"Among the 254 with cancers, 60, or 23.6 per cent., had relatives of the same or former generations with cancerous or other tumors.

"Among the 147 with tumors neither cancerous nor recurring, 27, or 18.3 per cent., had such relatives with cancerous or other tumors.

"Among the 10 with recurring tumors, 4, or 40 per cent., had relatives with cancers.

"According to these numbers, the respective hereditary tendencies to cancerous and to non-cancerous tumors would seem not very different. But an examination of the second and third tables discovers a great contrast between them.

"For (as Table III. shows), among the 60 cancerous patients whose relatives had tumors, not less than 57 had cancerous relatives; but (as in Table II.), among the 27 patients with tumors neither cancerous nor recurring, there were only 12 who had relatives with tumors like their own. The comparison of the respective probabilities of hereditary transmission would, therefore, be as 22.4 for the cancerous to 8.2 for the non-cancerous.

"The contrast appears the stronger in sight of the fact (also shown in Table II.), that the greater part of the instances in which similar innocent tumors occurred in more than one member of the same family were limited to one kind of tumor. Of the 12 patients who had relatives with innocent tumors like their own, 7 had some form of cutaneous cyst of the scalp, leaving only 5, or 3.4 per cent. as marking the probability of hereditary transmission in all the other forms of innocent tumors reckoned together.

"It is hence certain that cancerous disease, or a tendency to it, is prone to pass by inheritance from parent to offspring, and to occur (probably by inheritance of common properties) in many members of the same family and generation. It may seem unnecessary to bring evidence of a fact so generally believed; but there are some who doubt it,* and many who are not aware of the large proportion of cases in which cancer may be referred to an hereditary origin. Moreover, a comparison of the two tables (II. and III.) shows, by the contrast of the two groups of cases, the cancerous and the non-cancerous, how many instances of apparently hereditary origin of disease may be referred to accidental coincidence, or to the transmission not of a diathesis, but of some peculiarity of the structure or composition of a part. When, for example, the child of a cancerous parent has a sebaceous cyst in the scalp, we can only count it as an accidental coincidence; but (as Table II. shows) the cases of this kind are not very uncommon; and it might be right to endeavor to estimate from them a deduction to be made in the reckoning of the proportion of actually inherited cancers. For if, thus, dissimilar tumors may accidentally occur in members of the same family, so, in a certain number of cases, the occurrence of similar tumors in the same family may be referred to accident. However, as the deduction to be made on this ground can scarcely be calculated, and would certainly be less than the addition that we should have to make if we could reckon the cases of inheritance from patients with unknown internal cancers, I omit it, and thus sum up the general conclusions to be drawn from the tables:—

	Per cent.
"Of patients with non-cancerous tumors (Table II.) the proportion that has, or has had, relatives with tumors like their own is	8.2
Ditto with tumors non-cancerous, but unlike their own	4.
Ditto with cancerous tumors	6.8
Of patients with cancerous tumors (Table III.) the proportion that has, or has had, relations with cancers is †	22.4
Ditto with non-cancerous tumors is	1.
Of patients with recurring non-cancerous tumors (Table IV.) the proportion that has, or has had relatives with cancers is	40.

"A few words may be added concerning the last named cases. The number of instances of these recurring tumors, which occur in the members of cancerous families, justifies an opinion which I have long entertained, but which it is very difficult to establish, namely, that such tumors often represent what may

* The general ground of the doubt is, that cancer is so common that among any number of persons, whether cancerous or not, a large proportion would be found with cancerous relatives. The answer of this doubt may be gathered from these tables, especially from the contrast between tables II. and III. But, it is said, people remember their relatives having diseases so serious as cancers, but forget or never heard of their having less important tumors. The answer is in the known proportion of cases of inheritance of the cutaneous cysts, a proportion considerably larger than that of inherited cancers.

† This is a larger proportion than is stated in my lectures. The difference is probably due to my having here reckoned scarcely any cases besides those of patients whom I have seen, while in the lectures I referred to cases collected from various sources. I have, probably, inquired with more than ordinary care into the family histories of patients, but I have not questioned cancerous patients more closely or more generally upon this point than I have those with other tumors. On the other hand, I have not reckoned as patients having no relatives with tumors those in whose cases I have recorded nothing concerning their families.

be called a gradual failing of the cancerous diathesis. The cases which I have tabulated are only those which I have seen; but I have heard and read of others like them, and believe that time will prove that, among the offspring of cancerous patients, and among the members of families in which cancer has occurred, there is a peculiar liability to the production of tumors, which will recur after repeated and complete excisions, though they are neither cancerous in structure, nor attended with similar disease in the lymphatics or other organs, nor with any cachexia but such as may be ascribed to their gradual influence on the constitution.

"If this can be proved, we may justly hold that this character of recurrence indicates the existence of the cancerous diathesis, either with less abundance or with less concentration of material than is required for the production of a cancerous tumor with all the typical properties.

"The imperfection of the diathesis may in some cases indicate its progressive, but as yet incomplete development; but the probability that, in other cases, the diathesis is decreasing in hereditary transmission, is supported by facts in the history of other diseases. Thus, we know many of the liabilities of the offspring of gouty, and of phthisical, and of insane persons, and that their diseases, though they may be neither gout, nor phthisis, nor insanity, are yet of the same kinds—essentially the same diseases, but less manifested; or of the same type, but less strongly marked; and we know that success in the management of these diseases depends, in great measure, on a due recognition of their parentage. Now, the recurring tumors, I believe, illustrate the same principle in the pathology of cancers; and if so, they deserve the closest study, as being palpable examples that, in the hereditary transmission of morbid conditions, there is a tendency towards their becoming less, a tendency towards health.* This may be due either to dilution, or to changes comparable with those which restore an individual from disease to health; and very probably it is an example of that general law, according to which the deviations from the true specific form and composition, which constitute varieties in species, become in successive generations gradually less, till the perfect specific characters are regained.

"In practice, the recognition of recurring tumors suggests caution in speaking of what may follow the removal of any tumors from persons of cancerous family. And this caution should be the greater, the more the removed tumors deviate from the ordinary characters of innocent growths or of the fully developed natural structures. I think that the non-cancerous tumors most likely to recur are those which, at whatever date of growth, have structures similar to those of the natural parts in their very early embryonic state. Such are the recurring fibroid, composed almost wholly of elongated fibro-cells, and the recurring fibro-cellular, cartilaginous, and mammary glandular, in all of which we find abundant soft or liquid transparent blastema, in which the proper structures, when they are to be found at all, lie loose and disorderly in their most immature forms. Indeed, whether there be any suspicion of cancerous inheritance or not, all such soft tumors with imperfect embryo structures may be regarded with fear of their recurrence after excision."

On a ready method of determining the Presence, Position, Depth, and Length of a Needle broken into the Foot. By Mr. ALFRED SMEE. (Proceedings of the Royal Medical and Chirurgical Society, vol. i. numb. 3.)

In the "Medical Times" for the 14th of December, 1844, Mr. Alfred Smeë has published a portion of a lecture on the means of determining the presence, general direction, and size of a needle in the body. Mr. Smeë mentions the various means that may be employed for making the needle magnetic, and states that he has detected a piece of a needle weighing only one-seventh of a grain broken into the finger; but no minute details of this or of any other case are given, and on this account the following clear and minute description of

* I think, too, that the histories of rodent ulcers, and of lupus, should be studied with a similar suspicion of their relationship to cancers.

the method used for determining the presence, position, depth and length of a needle broken into the foot, may be interesting.

A lady in walking about her bed-room ran a needle into the great toe; on searching the floor a part of a needle was found, and there was every reason to believe, from the sensation, that the pointed end was broken off and left in the toe. Unsuccessful endeavors were made to extract it. About two months afterward, doubts were expressed whether any needle was in the foot; a scientific friend offered to settle that question, and, if it were there, to say in what part of the toe it then had its place, and what was its direction, its depth, and probable length.

In a letter to Dr. Bence Jones, who communicates the paper to the Royal Medical and Chirurgical Society, Mr. Smee says: "The following were the means employed. A fine sewing-needle was well magnetized, and a piece about an eighth of an inch long was broken off. Then a filament of cocoon silk, about an inch long, had one end attached to the middle of the little magnet by a touch of soft cement, and the other end to the handle of a camel's-hair brush. In this way a minute test magnetic needle was obtained, which pointed well under the earth's power, and could easily be brought near any part of the toe. The toe being examined by this needle, showed occasional deflexions of the latter, which, being imperfect as indications, still seemed to imply that a piece of the broken needle was there, but rather deeply situated. Now the means of increasing these indications, and making them tell their story more perfectly, was applied, and upon the following principles. A piece of unmagnetized needle will affect a little magnet at a distance very feebly compared to the same piece magnetized. The unmagnetized piece will affect either end of the test-needle alike, whereas the magnetized piece will affect the opposite ends in different ways, attracting one and repelling the other. A piece of unmagnetized needle can be magnetized at a distance by a magnet of sufficient power, and as well whilst in the toe as out of it; also its magnetic state can be reversed, if the inducing magnet be reversed; and further, it can by management be unmagnetized, and when without magnetism it is not rendered magnetic whilst the lines of force of the inducing magnet are perpendicular to it. Upon these principles I started, employing (as inducing magnet) a single bar horse-shoe magnet, made by Logeman, with the poles so far apart that I could introduce my thumb between them. The magnet was brought up to the toe, then taken away, and the part examined by the indicating needle. The indication was not stronger than before. Hence one of two conclusions was probable; either there was no piece of needle there, or its position was at right angles nearly to the line joining the poles of the inducing magnet where it had been applied. So the inducing magnet was employed again in a different position, and now the indicating needle told its story beautifully, showing that a little magnet had been formed within the toe, which by its power attracted one end of the needle and repelled the other. A few more trials with the inducing magnet showed in what position it was able to act most strongly on the hidden needle, and then the position of the magnetic axis of the former indicated the position of the latter. Reversing the position of the inducing magnet instantly changed the magnetism of the buried needle, and then that point of the skin which before attracted the marked end of the indicating needle repelled it strongly, and attracted the other end. It was beautiful to see when the indicating needle was carried round a given spot on the surface of the toe, how one end always pointed towards that spot, and even moved, as if striving to dip down to it. Thus the direction of the piece of needle, and the locality of one end, were clearly shown. Then came the question, where may the other end of the piece be, and what is the probable length of the whole?

"By carrying the indicating needle about the toe, it was found that the opposite end of the imbedded needle, though it exhibited an influence over the indicator, did not come near the opposite surface of the toe, but was buried deep in the flesh. Hence the broken needle pierced deep, and almost perpendicularly into the flesh, but did not come near the other side. I guess it, there-

fore, to be about the third of an inch long. Presently we may tell if the needle travels, and which way it is going.'

"Hence—1st. The *presence* of an imbedded needle may most surely be determined, by making it into a magnet by induction, and then testing for it by a minute suspended magnet.

"2d. The *direction* of an imbedded needle may be determined by marking the direction in which the inducing magnet makes the strongest magnet. When the length of the imbedded needle lies in the line joining the poles of the inducing magnet, it becomes the strongest magnet.

"3d. The *depth* of the imbedded needle may be determined by the intensity of the action near the surface of the skin.

"4th. The *length* of the imbedded needle may be guessed when the direction is known, and the amount of magnetic action at the part of the surface opposite to the spot where the needle entered is observed.

"Lastly, the *motion* of the imbedded needle may be determined by carefully noting, from time to time, the changes that require to be made in the position of the inducing magnet in order to give to the hidden needle the strongest possible magnetism."

On a case of Excision of the Head of the Femur and Floor of the Acetabulum for Caries combined with Pelvic Abscess. By HENRY HANCOCK, Esq., F. R. C. S., Surgeon to Charing Cross Hospital. ("Lancet," 18th and 25th April, 1857.)

This is the first case in which the operation of excision of the head of the femur has been undertaken with the avowed object of removing the floor of the acetabulum, and of relieving pelvic abscess. It is a case which, according to ordinary rules, ought never to have been undertaken. Thus, the head of the bone remained *in situ*, the acetabulum was extensively diseased and perforated, and there was pelvic abscess. Mr. Hancock shows that the cotyloid cavity has been more or less implicated in the majority of cases in which the head of the femur has been excised, and in this way, among others, he attacks the established rule that the cotyloid cavity must be free from disease, and the amount of pelvic disease but trivial in cases where this operation is undertaken. Thus, in 18 out of the 26 operations performed in this country, including his own, the acetabulum afforded more or less evidence of departure from its natural and healthy condition. At the time of operation—

In 2, there was scarcely a trace of acetabulum.

In 3, the acetabulum was found filled with a fibro-gelatinous mass.

In 6, the gouge was employed for caries.

In 1, the acetabulum was said to be enlarged by absorption.

In 1, the acetabulum is described as being deprived of cartilage.

In 1, it was perforated.

In 1, it was partly obliterated.

In 1, the patient died two years afterwards, with sinus above Poupart's ligament, copious discharge, pelvic caries, and perforated acetabulum. And

In 1, the patient died three months after the operation from profuse suppuration, which was found to extend into the pelvis through an opening in the cotyloid cavity.

"After all," says Mr. Hancock, "it is only in a very few instances that the surgeon can tell beforehand what is the condition of the cotyloid cavity; but supposing he can do so—that a patient presents whose case imperatively calls for operation in all respects but that the acetabulum is extensively diseased, are we to abandon this patient to his fate, and allow him to die in agony? Is it not rather an additional reason for performing the operation? since the greater the amount of disease the smaller the chance of recovery, whilst the value of an operation does not consist in the facility of its execution, but in the urgency of the symptoms and the extent of disease and suffering it is capable of removing. It is very true that in many instances the bones of the pelvis appear to possess a wonderful power of reparation. The cases operated upon show this; but if we look through the list, we find three in which the patients died sooner or later from profuse suppuration, and wherein the acetabula were

found perforated after death. It would seem therefore much the safer proceeding entirely to remove the doubtful portion of the acetabulum than to leave it behind or merely scrape it with a gouge.

"Mr. Coulson and Mr. Henry Smith have laid considerable stress upon perforation of the acetabulum as an insuperable barrier to the operation, but if I am able to prove that so far from being so, the operation may be performed, even under these apparently unpromising circumstances, with safety and benefit, it will, I am sure, be agreed, that its application to such cases eminently enhances its value, since it affords a prospect of cure to an amount of disease hitherto considered irremediable. Presuming always that the disease is confined to these limits, that the viscera and spine are healthy and the lungs free from tubercles, I do not understand why a pelvic abscess, depending upon hip-disease or caries of the pelvis, should not be cured as well as any other abscess connected with caries elsewhere, provided it can be reduced to the same condition. The amount of caries is often comparatively small, and though capable of causing excessive discharge, is confined to the limits of the acetabulum, and the part perforated.

"In pelvic abscess depending upon hip-disease, the head of the bone, or what remains of it, is often retained in the acetabulum after perforation of the latter has obtained; the matter thus escaping from the joint, the same lull in the constitutional symptoms takes place, as is so frequently observed in spontaneous dislocation. Such abscesses are not cured, because the matter, if left to itself, cannot find a depending exit, and the cause, or caries, is allowed to remain. I cannot understand how so celebrated an anatomist as Dr. Knox could have asserted that the pelvic portion of the hip-joint is beyond the reach of excision. In cases requiring it, the pelvis may be reached at almost any point. Mr. Syme has recently removed necrosed bone from the tuber ischi, and in another case from the ascending ramus of the ischium and inner margin of the pubic arch. The ilium is separated from the peritoneum and fascia by the iliacus internus. The ilium, ischium, and pubis, opposite the joint and beyond, are separated from the abdominal and pelvic cavities and viscera by pelvic and obturator fasciæ, the obturator internus, and levator ani muscles. The matter in pelvic abscess is outside the obturator fasciæ, between it and the bone separating the former from the latter, and causing a considerable interval between the two, so that the whole of the cotyloid portion of the pelvis, and for some distance beyond, may be removed without any risk of injury to the pelvic contents. But it may be asked why the spontaneous openings of a pelvic abscess cannot effect a cure equally with one made through the acetabulum? We find the answer in the shape of the pelvis, for when a patient lies on his side, the cotyloid portion is the most depending, so that when a free opening is made in that situation, and the patient is turned over on that side, not only does the matter find a free and depending exit, but the contents of the pelvis gravitating upon the abscess, tend to consolidate the parts, obliterate the cavity, and assist the cure. I need scarcely observe that before undertaking these operations, we should make a very careful examination of the patient, and, as far as possible, convince ourselves of the non-existence of disease elsewhere. We must assure ourselves that the pelvic abscess has been preceded by hip disease; is connected with it, and not with disease of the spine, with psoas, or iliac abscess. One point of diagnosis, therefore, in these cases, is the pre-existence of hip-disease. Another is the locality at which the spontaneous openings usually occur. When the matter is poured into the pelvis through the perforation of the acetabulum, it falls, as we have seen, between the obturator fascia and the bone, and in consequence of the firm attachment of the former to the falciform margin of the great sacro-sciatic ligament, the matter cannot reach the skin in that direction, but gravitating posteriorly by the rectum, it presents by the side of the anus, simulating fistula. It occasionally bursts into the rectum itself or the vagina, and it has been known by its pressure upon the neck of the bladder to interfere greatly with the process of micturition; but the more frequent locality, as far as my experience serves me, is in the outer part of the groin, *near the anterior inferior spinous process of the ilium, probably induced by the position maintained by the patient at this stage of the disease.* This is a

point upon which I am induced to attach some importance, as affording a means of diagnosis between pelvic and psoas abscess, as the latter usually present more internally, nearer the middle of the groin. The existence of openings externally in the neighborhood of the joint will also assist, as pelvic abscess depending upon hip-disease very rarely, if ever, takes place without having been preceded by suppuration about the joint itself.

"When the opening occurs in the groin, the existence or non-existence of perforation of the acetabulum may be ascertained by a probe slightly curved; by introducing it into the opening, and directing its point downwards and outwards, it may be passed through the perforation into the joint; and I have also observed that, whereas in psoas abscess the probe can be more readily passed backwards and upwards, in these cases it takes the opposite direction—downwards and backwards.

"In some cases of hip-disease, an abscess forms in the pelvis before actual perforation of the acetabulum occurs, though, in all probability, depending on the disease going on in that cavity. In such cases, should the connection be clearly made out, and circumstances warrant operative interference, the floor of the acetabulum may be readily perforated by a trephine, and any amount of the acetabulum removed by a metacarpal saw. So, likewise, in those cases in which there is neither pelvic abscess nor perforation, nor extensive disease of the acetabulum, I cannot see the objection to the operation."

It is indeed difficult to see what objection there can be to the operation after reading Mr. Hancock's case—a case which will occupy an important place in the annals of operative surgery.

CASE.—Timothy D—, *et. 14*, admitted under my care to Charing Cross Hospital, in July, 1856, with disease of the hip-joint. Five years before, observing a swelling in the groin, he attended at the Middlesex Hospital, but got worse, and was made an in-patient. He remained there five months. Two years afterwards, abscesses formed around the joint; and, eighteen months ago he first came under my care at Charing Cross Hospital, where he remained three months, when he left apparently cured. He continued able to walk for ten months, when he was attacked with severe pain in the knee, which increased so much, that upon his application I again admitted him into the hospital. Shortly afterwards, abscesses formed around the hip-joint, opening behind the trochanter, and also low down on the back of the thigh; and, subsequently, an abscess burst in the groin; and a probe introduced into this opening passed readily into the pelvis. He, in the course of time, became so emaciated and worn out with the profuse discharge, night sweats, loss of appetite, &c., that it was evident he could not long survive if something were not done for him. Great prostration and cough supervened, and his sputa became streaked with blood. I, therefore, requested Dr. Willshire to examine his lungs. He did so, and pronounced them free from any cause contraindicating an operation. Having as far as possible ascertained that the disease was confined to the hip-joint and pelvis, I examined the inside of the latter with a probe through the opening in the groin, and then discovered perforation of the acetabulum. Under these circumstances, I concluded that the pelvic abscess, and the boy's condition generally, were due to hip-disease, and that by removing the head of the femur, and the floor of the acetabulum, I might not only get rid of the diseased bone, but also by affording a free and depending opening for the discharge of the matter, the pelvic abscess might be approximated to the condition of an ordinary abscess, and thus the patient be saved; and I accordingly proposed to my colleagues to remove the head of the femur and floor of the acetabulum, and so much around it as the extent of the disease required, the patient having agreed to undergo whatever I might advise. On the 6th of December, 1856, the patient having been submitted to the influence of chloroform, and placed upon his left side on the table, I, assisted by Mr. Canton, Mr. Hird, and Mr. Barwell, commenced the operation by making a crucial incision over the great trochanter of the femur, extending about three inches beyond in all directions. The flaps having been reflected, a circular incision was carried round the head of the bone, which remained in its cavity, cutting through the glutæi, the muscles inserted into the digital fossa,

the pectineus, &c., and opening the capsular ligament. Upon examination by the finger, the neck of the femur was discovered to be so much involved in the disease that I decided upon cutting through the bone immediately below the great trochanter; after which, the head of the bone was removed without difficulty. When this was done, the acetabulum was found to communicate by two openings at its deepest part with the pelvic abscess. I endeavored to excise the floor of the acetabulum with the bone-nippers, but could not, and therefore with a metacarpal saw I cut round the acetabulum, removing the whole of the diseased bone, exposing the thickened pelvic fascia, and leaving a large opening for the escape of the matter from the pelvic abscess. It has been stated in another journal that I gouged away the several portions of acetabulum. This is an error; I did not use that instrument at all. The flaps were then brought together, and united by sutures, except opposite and below the opening in the acetabulum, where they were kept separated by lint. A splint, extending from the armpit to the foot, was next applied, as the leg could now be straightened without difficulty, and the patient returned to his bed. Very little blood was lost during the operation, and no vessels required tying.

The operation was followed by almost instant relief of his constitutional symptoms. He was a little sick for the first forty-eight hours from the chloroform, but otherwise his course has been one of uninterrupted improvement. His countenance soon became cheerful and free from anxiety; his night sweats ceased in two days from the operation. On the third day, the wound in the groin was entirely healed. The discharge from the wound made at the operation, which for the first few days was very abundant, gradually became thicker and diminished in quantity until the present time, when it does not amount to a teaspoonful during the twenty-four hours. He was able to sit up in bed for the first time for nearly a year with his knee straight fourteen days after the operation. In three weeks, he dressed himself, and sat in a chair by the fire. In five weeks, he was able to walk with a crutch and a stick; at the end of eight weeks, however, he imprudently dispensed with both crutch and stick; inflammation ensued, followed by abscess external to the pelvis. This, however, has subsided, and he is now progressing steadily, gaining flesh and strength, at the present time being able to walk in the park daily.

A Report on some of the more important points in the treatment of Syphilis. By Mr. HOLMES COOTE, Assistant-Surgeon to St. Bartholomew's Hospital. (8vo, London, Churchill, 1857. pp. 141.)

Mr. Holmes Coote is far from regarding venereal diseases in that very serious light which some would make us believe—as the parent, that is, of an endless variety of ailments, and as poisoning successive generations almost interminably. In his opinion, on the contrary, “the poison in general wears itself out, except in the very severe cases, and fortunately the transmission of syphilis from parent to offspring is comparatively uncommon.” The special points which Mr. Coote endeavors to prove are, that syphilitic sores owe their distinctive characters to the action of the poison on particular tissues,—that there is but one poison which may produce any of the varieties of secondary, or constitutional symptoms,—and that the occurrence of bubo, whether suppurating or not, has no influence upon the constitutional effects.

The report is exclusively devoted to Mr. Coote's personal experience.

III.

REPORT ON PHYSIOLOGY.

On the proximate cause of Functional Action. By JAMES HINTON, Esq. ("Med. Chir. Review," July, 1856.)

Mr. Hinton divides the actions which are recognized in animal bodies into two classes, the nutritive, and the functional; the latter he distributes into nervous action, muscular contraction, and secretion. Of these he remarks that they are accompanied by a decomposition, or retrograde chemical change, more or less complete, in the tissues, and are thus placed broadly in contrast with those processes which effect the growth of the body. "No explanation is attempted of the phenomena of nutrition; accepted as facts, they form the bases on which it is sought to found a consistent theory of the cause of functional activity."

The view taken is, that in living structures the chemical affinities of the elements are coerced or held in a state of tension, which may be illustrated by the bent condition of a spring, or the compression of vapor, and that the functional power of the body is due to this state of chemical tension. So that the animal body in this respect presents a precise analogy to a machine in which power is stored up by tension, or coercion of any force or tendency. The existence of a controlled or subjugated tendency to chemical change in living bodies is the origin of all the capacity for functional action which they display, and the disintegration of their tissues is not a "result" or "condition" of their activity, but rather the moving spring and source of that activity itself. In this respect the organic and inorganic worlds obey a common law. Organisation gives a capacity for action only by virtue of the resistance it presents to the chemical forces; these chemical forces acting under definite limits and in connection with various structures, being the true sources of all functional activity. A living body is a divinely made machine, involving in its *working* no other principles than those which we every day apply and see to regulate the entire course of nature. For the inorganic world furnishes abundant instances of the same balancing of forces resulting in a similar activity or capacity for action. *Irritability*, in so far as it denotes a capacity for responding to stimuli, exists in every form of matter in which there is found the same powerful tendency to change of state with which it is associated in living bodies. The iodide of nitrogen, gunpowder, and solutions which crystallize upon a touch are referred to. In all such instances the action is immediately due to pre-existing and restrained tendencies to change of state, so that they furnish an exact parallel to the view proposed of the animal functions. Adopting this view an immediate simplicity results; sensibility and contractility no longer having any place as properties of living structures apart from their known tendency to chemical change.

An application of these views is made to the three classes of functions, respectively. It is argued that the conditions under which the functional activity is elicited, indicate the permission of a chemical change under the influence of pre-existing tendencies, and the force resulting from such change, operating through the diversified tissues, is the natural agent to which the various functions must be referred. In other words, the tissues are in a state of unstable equilibrium, which the functional stimuli overthrow. The action of

the heart is thus referred to: "In its muscular structure or nervous ganglia, the chemical and vital forces are so balanced that they assume a state of alternating activity. When, by the process of nutrition, the chemical affinity has been accumulated to a certain amount, it overpowers the vital resistance, and that chemical change which is the cause of contraction, ensues. And the same series of changes continually recurs, because the vital state is constantly renewed. The heart may be said to wake and sleep with each recurrence of its beat."

The great advantage which results from this view of function is the simplification of effects in the conception of the vital force itself. One whole division of what under other views is considered as vital action, being thus transferred to the domain of chemical agency, the idea of the vital force stands out clear and distinct before the mind as the peculiar molecular action which forms and nourishes the living body. That is its nature; that its entire scope. Thus, by resistance, it accumulates chemical force, and furnishes the conditions under which the functions—motion, nervous action, secretion—exhibit themselves as the results of chemical affinity.

On the relative Temperature of Arterial and Venous Blood. By Mr. SAVORY, Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital, &c. (Pamphlet, 1857.)

From a series of very carefully conducted and conclusive experiments, it appears that, so long as the natural pulmonary circulation continues, the blood returns from the lungs to the left side of the heart warmer than when it was sent there from the right side, and that, consequently, *arterial is warmer than venous blood*. It appears, also, that the temperature of arterial blood rapidly falls to that of venous blood when the pulmonary circulation is interfered with, and the respiratory changes diminished.

Now there can be no doubt that this question, whether arterial or venous blood is the warmer, is one of considerable importance, for it must lie at the very foundation of any correct theory of animal heat. It is impossible to reconcile the fact that arterial is warmer than venous blood with the most current theory of the production of heat—that which removes its seat from the pulmonary, and places it exclusively in the systemic capillaries. The admission of the fact that venous is cooler than arterial blood, turns one's mind from the modern theory in the direction of the older, and now almost forgotten one. But although incompatible with the assumption that the only change which the blood undergoes in its temperature during its circulation through the lungs is a loss due to evaporation, it is by no means at variance with the belief that heat is generated during its circulation through the systemic capillaries also.

The doctrine most completely in harmony with ascertained facts is that which refers for the source of heat (1) to the action of oxygen inspired upon the blood as it circulates, and (2) to those changes between the blood and the tissues which are involved in nutrition.

"That blood returning from the systemic capillaries is cooler than when it entered them, only proves that more heat is there removed from the blood than is produced in it by the chemical changes connected with nutrition. If it were not for these, and doubtless the changes still going on in the blood itself also, supplying, to a great extent, the demand for heat, the blood would be much more cooled during its passage than it is.

"The following experiment will probably illustrate what is meant: it was practised on an arm a short period after death:—

"Having secured a stopcock directed downwards in the brachial artery just above the elbow, I connected it, by means of an elastic tube, with a reversible syringe. In the tube immediately above the stopcock, I placed the bulb of a thermometer, and another in the median basilic vein. By immersion in warm water, the temperature of the limb having been raised to 100°, I injected water of 100°, as indicated by the thermometer in the tube, through the arm, until it *escaped freely* from apertures in the superficial veins in front of the elbow. *After the injection had been continued very rapidly for some time, the ther-*

nometer in the vein varied from 85° to 90° , thus indicating a loss of from 10° to 15° during its circulation through the arm. After some time, the water returned less freely, and the limb became tense and distended.

"Again: having passed a thermometer through the arteria sacra media into the aorta of a dead dog, and another into the inferior vena cava through either the renal or common iliac vein, and then having raised the body by immersion in warm water to the temperature of the living animal, I have rapidly injected from above water varying from 100° to 110° through the posterior portion of the body, allowing it to escape freely by the vena cava. After a short time, there was always a difference between the two thermometers of 10° or more.

"This experiment is advanced as an illustration only. It is far too rough and imperfect to prove anything; but, so far as it goes, it shows how much heat may be abstracted from the circulating fluid by the tissues when no compensating production of it ensues. Such an experiment, if more skilfully repeated, would probably be attended with less loss, but always, beyond doubt, with much more than naturally occurs."

At present there is no evidence upon which we can safely explain altogether the increase of temperature in the lungs, though it is undoubtedly the result of the changes which the blood there undergoes. Certainly it cannot, as Dr. Davy supposed, be referred altogether to the union of oxygen with the blood. Thus Mr. Savory performed several experiments, from which the general conclusions are these:—

"1. That when venous blood was treated in this manner with oxygen, its temperature was usually raised from 1° to $1\frac{1}{2}^{\circ}$ or 2° .

"2. That when venous blood was treated in a similar manner with hydrogen or carbonic acid, its temperature was as frequently raised, and generally to the same extent.

"3. That similar experiments upon arterial blood usually yielded the same results.

"4. That, in all cases, the increase of temperature seemed to be the result of the agitation. By shaking water in a similar manner with air, a small quantity of mercury being present, I have often raised its temperature, though to a less extent.

"I have ascertained from other experiments that the increase of temperature is not imparted by the hand or from any external source."

Mr. Savory's paper will well repay a very careful perusal.

On the Non-poisonous Effects of Transfusing different kinds of Blood. By Dr. BROWN-SÉQUARD. ("American Journal of Medical Sciences," July, 1856.)

In some recent experiments at the Ecole Pratique in Paris, Dr. Brown-Séquard exhibited a dog into whose jugular vein he had the day before injected a mixture of blood drawn from two pigeons and a rabbit, and to all appearance the animal was perfectly well. He also performed certain experiments which show that MM. Prevost and Dumas are wrong in maintaining that blood is poison and not life in the veins of an animal, if it be taken from an animal of a different species. All these experiments show that the blood is poison, even when taken from the same animal, if it is injected without due attention having been paid to its aëration; and Dr. Brown-Séquard thinks that the fatal results in MM. Prevost and Dumas' experiments were due, either to air having got into the vessel, or to the blood not having been properly aërated, or else to too much blood having been injected at once. Convulsions and speedy death were the invariable consequence of the injection of non-aërated blood.

These experiments will be given at length presently, and in the mean time we are indebted for these scanty particulars to Mr. David R. Walter, who mentions them in a letter to the accomplished editor of the "American Journal of Medical Sciences."

On the influence of Light upon the Irritability of the Nerves. By Dr. W. MARME and Dr. J. MOLESCHOTT. (Schmidt's "Jahrb.," No. 8, 1857.)

• These investigations go to show that the irritability of the nerves is greater

in frogs which have been kept in the light than in animals of the same kind which have been kept away from the light. Every precaution was taken to procure animals of the same size and condition, and with the exception of the light, the subsequent treatment was precisely similar. The irritability of the nerves was estimated by the activity of the current in the ischiatic nerve, and the galvanometer employed (that of Du Bois-Reymond) had 24,000 coilings. Twenty-five frogs which had been in the dark were compared with twenty-five frogs which had been freely exposed to daylight. In the frogs which had been kept in the light the nerve-current deflected the needle in the first instance to 28.5° , in the second instance, to 20.1° ; but in the frogs which had been excluded from the light, the primary deflection of the needle was only 23.5° , the secondary only 1.56° .

On extirpation of the Celiac Plexus. By Dr. S. SAMUEL. (Wien Med. Wchnsch 30, 1856; and Schmidt's "Jahrb.," vol. 93, No. 2, 1857.)

Dr. Samuel's experiments were performed on rabbits, dogs, and cats, and the results were very unmistakable. In all cases, the effect of extirpating the plexus was to produce extreme hyperæmia of the intestinal mucous membrane—so extreme as to surpass even that of cholera. This hyperæmia, which was in no way connected with peritonitis, was confined to the upper part of the intestines. In all cases, also, the effect of the operation was to increase the amount of intestinal secretion, though not to the extent met with in violent diarrhœa or cholera.

Investigations on the Spinal Cord. By Dr. BROWN-SÉQUARD. (Amer. Quart. Journ. of Med. Sciences, July, 1856.)

Dr. Brown-Séquard believes that he is able to draw two series of conclusions from his elaborate experimental investigations upon the spinal cord.

I. *Conclusions relative to the distribution of the fibres of the posterior nervous roots in the spinal cord.*—1. The fibres of the posterior nervous roots appear to pass in part to the posterior fasciculi, and probably also, but in a very small number, to the lateral fasciculi.

2. The fibres of the posterior roots which pass to the posterior fasciculi, appear to proceed, in part, towards the brain, and, in part, in the opposite direction; so the one portion are ascending, and the other descending.

3. The fibres of the posterior roots which pass to the lateral fasciculi, seem also to be composed of two series, the one ascending, the other descending.

4. In the posterior gray cornua, there appears to be, also, ascending and descending fibres derived from the posterior roots.

5. In the posterior and lateral fasciculi, as well as in the posterior gray cornua, the descending fibres appear to be more numerous than the ascending.

6. The ascending and descending fibres derived from the posterior nervous roots appear, after passing for a short distance, to leave the posterior and lateral fasciculi, as well as the posterior gray cornua, to penetrate the central gray substance.

II. *Conclusions relative to the transmission of sensitive impressions in the spinal cord.*—1. On their arrival at the spinal cord the sensitive impressions pass by the posterior fasciculi, the posterior gray cornua, and probably, also, by the lateral fasciculi.

2. In these different portions of the cord, the sensitive impressions mount or descend, and, after a short course, towards the brain or in the opposite direction, they quit these portions of the cord to enter the central gray substance, in which, or by which, they are finally transmitted to the brain.

The fifth conclusion of the first series is one which, according to Dr. Brown-Séquard, is the least positively established of the six. In saying that descending fibres appear to be more numerous than the ascending, he wishes only to be understood as offering the probable explanation of the hyperæsthesia of those portions of the body which are behind the point at which the posterior fascicula of the cord have been divided transversely. He is aware that there are two other explanations that may be given of this phenomenon which pos-

sess perhaps equal probability. Thus, it is possible that it is a property of the descending fibres to possess a greater amount of sensibility than the ascending; if so, it is not necessary to explain the fact referred to by supposing that there should be more descending than ascending fibres. It is very certain that there is a special cause of the hyperæsthesia experienced, after a division of the posterior fasciculi, in the parts below that division, and consequently the descending fibres should cause more pain than the ascending in the experiments of Dr. Brown-Séquard, because the properties of the descending fibres cannot be tested until after the posterior fasciculi, or one of them, have been divided.

It is possible, then, that even though inferior in number, the descending fibres may cause a greater amount of pain than the ascending. Let the question be settled as it may in reference to the relative number of the different fibres, an important anatomical and physiological fact results from the facts reported in this memoir—it is, that the posterior nervous roots of the cord, in the same manner as the great root of the trigeminus in the bulb, send into the cord sensitive descending fibres, or those for centrifugal transmission. Anatomy must decide as to the number; with respect to the question of the existence of these fibres, anatomy has already confirmed what vivisections so positively teach. We have seen, and the most skilful microscopists have likewise seen, descending fibres proceeding from the posterior nervous roots.

On the cause of the Rhythmic Motion of the Heart. By Mr. PAGET, Assistant Surgeon to St. Bartholomew's Hospital. (Proceedings of the Royal Society, May 28, 1857.)

The following quotations will explain better than we can do in any words of our own, the opinions of the author upon this very interesting subject. They are taken from the Croonian Lecture recently delivered before the Royal Society:

"In all organic processes there is as minute a regulation of time as there is of quantity, or shape, or quality of matter. Timework is not a singular characteristic of quickly rhythmic organs; it is a rule of life; and its rate in each organism is neither determined, nor beyond certain limits alterable, by external conditions, or by any appreciable qualities of weight or composition (as are the time-relations of inorganic masses); but is determined by properties inherited, and inherent in the very nature of the organism, and is least alterable by external conditions in the highest organisms.

"But though the general law of chronometric nutrition (if I may so call it) may be evident, yet it may be objected by some, that it is proved only for such nutritive processes as are long-continuous and cumulative; that it is an unwarranted assumption to think of a rhythmical or frequently interrupted nutrition. To which objection the answer may be, that whether we regard a rhythmic nutrition as the cause of rhythmic motion or not, we are obliged to hold such a method of nutrition as a fact. For we can be nearly certain that in the heart, as in other muscular, or any other parts, the successive impairments and renovations of composition, which constitute the process of nutritive maintenance, are severally accomplished during the successive periods of action and of repose, all exercise being attended with impairment of composition, such as can be repaired only during repose. Now the only repose of the heart's muscles, and I suppose of its nervous system also, is in the brief intervals between their successive actions; and in these intervals, and, therefore, with a rhythmic nutrition co-ordinate with its rhythmical action, the heart structures must recover from the changes suffered in their actions. Whether, then, as a cause, or as a consequence, where there is rhythmical action there must be corresponding rhythmical waste and repair; for we cannot reasonably suppose that the heart, or any other similarly acting organ, has, as a special prerogative, an exemption from the law of impairment in or by exercise: such an exemption is, indeed, inconceivable.

"Now if rhythmic nutrition be thus proved as a necessary attendant of rhythmic action, it must be regarded as the cause, not the consequence, of the

action; for in all cases nutrition has precedence of other actions in organized bodies; and the time-regulation of nutrition is a general and principal fact, and is a cause, not a consequence, of many phenomena which we trace in other organs than the heart, and many of which are attended with time-ordered movements.

"I suspect that, to many, that which will seem most difficult of acceptance, is the belief that in so quick rhythmic actions as that of the mammalian heart (for example), or that of cilia, there can be a corresponding quickness of alternation of the progressive and retrogressive changes which essentially constitute nutrition. It must be admitted that, when we watch these movements, they appear, at first sight, very unlike anything that can result from nutritive changes, in which we are apt to think of a certain deliberation and quietness. But all rhythmic movements are not thus rapid; and when we watch the actions of a heart reduced to move only once in two or three minutes (as a frog's may be by ligature around the venous sinus), the appearance is like nothing more than it is like that of a process of nutritive changes, in which the structures gradually reach a climax of instability, and then quickly change. Whatever value then there may be in the appearance of a rhythmic action as an indication of its cause, it might be adduced on either side of the inquiry.

"But let me add, that the nutritive changes to which I here refer, do not involve the supposition of any rapidly successive making and unmaking of the structures of the rhythmic organ, whether the heart or any other. We have probably held too much of the making and unmaking of elemental parts as essential to their maintenance by nutrition. In the modelling of parts during development and growth, such complete changes probably occur; but in mere maintenance of parts there is no evidence of their frequent or ordinary occurrence, and to assume it is contrary to the fact, that we rarely find any rudimental structures among the perfect ones. In the most active muscles of the adult, for example, I doubt whether a rudimental or developing fibre could be found; we have sufficient chemical evidence of a constant change of material in them, but no evidence of an equal or parallel change of structure. And so in the blood; the change of material is very rapid, but the change of structures, which we may in some measure estimate by the proportion of white or rudimental blood cells, is probably slow.* And again, in the secreting glands, excepting those of the skin and the breast, we have no evidence, and, I think, no sufficient reason to believe, that in all cases the gland-cell-walls dissolve or burst in the act of secretion, so as to need the entire new formation of fresh cells. For we find in most of the active glands no considerable number of either rudimental or degenerate cells; and the observations of Ludwig and Rahn on the secretion of saliva indicate, as many other facts do, that in ordinary secretion (which is the ordinary nutrition of glands) the cell-contents gradually transformed, flow out through the persistent cell-walls.

"Nutritive maintenance, then, probably requires nothing more than molecular substitution. Atoms even of the refuse substance may be passing out, and atoms of the renewing substance passing into places among the structures of a comparatively persistent framework. Cell-walls or their analogues may be long-lived, while their contents are undergoing continual mutation. Such a process of molecular interchange and passage is, indeed, visible in the absorption of oil through the epithelial cells and villi of the intestines; and this is probably only a coarse example of the ordinary manner in which cells change their contents in the nutritive processes. Changes like these may well consist with the quickest rhythmic action.

"I would thus, then, conclude as to the most probable explanation of the rhythmic action of the heart:—

"1. In the vertebrata it is due to the time-regulated discharges of nerve-force in certain of the ganglia in and near the substance of the heart, by which discharges the muscular walls are excited to contraction.

* The very small quantity of iron, in proportion to the quantities of the other constituents of the blood-cells, found in the excretions, is another indication of the comparatively slow waste of the red blood-cells, and may suggest, besides, that in nutritive maintenance there is not an equal mutation of all the component substances of a structure.

"2. In invertebrata, the corresponding pulsatile movements of hearts or vessels are probably independent of nerve-force.

"3. The time-regulated rhythmic action, whether of the nervous centres or the independent contractile walls, is due to their nutrition being rhythmic, *i. e.* to their being, in certain periods, by nutritive changes of composition, raised, with regulated progress, to a state of instability of composition, in their decline from which they discharge nerve-force, or change their shape, contracting.

"4. The muscular substance of the heart in vertebrata, governed in its rhythmic action by appropriate nervous centres, has a rhythmic nutrition of its own, corresponding and co-ordinate with theirs; the impairments of its structure during action being repaired in repose.

"5. Rhythmic nutrition is a process in accordance with the general laws of organic life, very many organic processes being composed of timely-regulated alternate action and inaction, or alternate opposite actions, *i. e.* being rhythmic, with larger or shorter units of time; and all organic processes being chronometric, *i. e.* ordered according to laws of time as exact, and only as much influenced by external conditions, as are those relating to weight, size, shape, and composition."

Vocal Gymnastics; or a Guide for Stammerers, and for Public Speakers and others who suffer from certain minor peculiarities of Utterance, with an Appendix of Cases. By G. F. URLING, Esq. (12mo, London, Churchill, 1857, pp. 89.)

In a very small compass, we have here much really important matter—matter which is not a little interesting to the physiologist, and which is more than interesting to those whose sufferings it is intended to remedy. The formation of the consonants, the relation between vowels and consonants, and some other points in the physiology of speech, are explained with much clearness and simplicity; and we are mistaken if the view taken does not, in many instances at least, recommend itself to the physiological critic. Stammering, in accordance with the principles laid down concerning speech, is shown to be dependent upon, (1) Mismanagement of the breath; (2) Faulty vocalization; and (3) Faulty articulation, and the mode of cure educed is logical and intelligible. That the mode of cure is successful appears from the letters contained in the Appendix.

On the Digestion and Absorption of Fatty Substances without the aid of the Pancreatic Juice. By M. COLIN, of Alfort. (Mon. des Hôpitaux, April 25, 1857.)

After tying the excretory duct of the pancreas, and making the pancreatic juice to flow away from the animal, M. Colin obtained from the thoracic duct of an ox not less than forty litres of perfectly emulsified chyle within twenty-four hours, from which a large amount of fat was procurable by means of ether; and hence it appears that the pancreatic juice is not absolutely essential to the digestion and absorption of fat. This experiment, we believe, has been repeated by M. Berard.

On some points in the Anatomy of the Liver of Man and vertebrate animals, &c. By Dr. LIONEL S. BEALE, Physician to King's College Hospital, Professor of Physiology in King's College. Illustrated with sixty Photographs. (8vo, London, Churchill, pp. 80, 1857.)

This volume is a reprint of certain lectures, delivered at King's College, which appeared originally in one of the weekly journals. For some time past, Dr. Beale has devoted especial attention to the anatomy of the liver; it is certainly necessary to read his book to learn what is to be known upon this interesting subject. That his labors have not been without fruit will appear from the following summary:—

The livers of all invertebrate animals are penetrated in every part by two

sets of channels, which alternate with each other. One series, *portal canals*, contains a branch of the portal vein, hepatic artery, and hepatic duct, *interlobular*; and the other series, *hepatic venous canals*, is occupied by a single branch of the hepatic vein, *intra-lobular*.

Division of the organ into Lobules.

The vessels and ducts ramifying in the portal canals are ultimately distributed in such a manner that they serve to divide the organ into little masses, and thus map out spaces, or *lobules*, each of which contains all the structural elements of the organ, and may be regarded as an *elementary liver*.

In the intervals between the fissures by which the portal vein, artery, and duct are conducted to the lobule, its capillary vessels and its secreting structure are continuous with those of adjacent lobules.

The size and form of the lobules differ much in different animals; but their essential structure is the same in all, excepting the pig, in the Polar bear, according to Muller, and in the *Octodon Cummingii* (one of the rodents), according to Hyrtl.

In these exceptional cases the liver is divided into a number of distinct and separate lobules, each provided with a capsule of its own, just as the kidney of the porpoise and of the seal is divided into a number of separate renules.

In the pig each lobule is provided with a separate fibrous capsule of its own, and is, therefore, completely isolated from its neighbors. Branches of the portal vein, artery, and duct run between them, and give off branches to contiguous lobules. In the intervals between the fibrous capsules areolar tissue can frequently be demonstrated.

In all cases, upon a section, the lobule is seen to be bounded externally by branches of the vein, artery, and duct, and in the centre is situated a small branch of the hepatic vein.

Areolar Tissue in Portal Canals.

In the liver of the human subject, and in that of vertebrate animals generally, with the exceptions above mentioned, the lobules are not separated from each other by any fibrous partition, and there is no areolar or fibrous tissue, or prolongation of Glisson's capsule between them, or in their interior.

The vessels at their entrance into the liver, and as they run for some distance in the larger portal canals, are surrounded with much areolar tissue; but the disposition of this texture about the vessels of the liver is very similar to its arrangement about the larger vessels distributed to other organs.

Intimate Structure of the Lobule.

The *lobule* itself is composed of a solid capillary network, and of another network composed of a very delicate tubular membrane, in which the liver cells are contained.

These networks mutually intertwine with each other.

The capillary network is directly continuous with the smallest *interlobular* branches of the portal vein, distributed upon the circumference of the lobule on the one hand, and with the small *intra-lobular* branch of the hepatic vein arising in its centre upon the other. The vessels of the network converge toward the centre of the lobule.

Small branches of the *artery* open into the venous capillaries of the lobule, near its circumference, and the diameter of these small branches is considerably less than that of the venous capillaries into which they open; the former not more than the 1-4000th part of an inch in diameter, the latter about the 1-600th.

In all cases, the blood, enriched with constituents recently absorbed from the intestine, flows with a gradually increasing rapidity from the circumference of the lobule towards its centre, while the bile flows in a precisely opposite direction.

Of the Liver Cells and of the Tubular Network in which they lie.

The liver-cells lie within a tubular network of basement membrane, which

separates them from the walls of the capillaries. In many cases, however, these thin membranous tubes cannot be separated, and are, no doubt, incorporated with each other.

The cells are not attached to the basement membrane of the tube, but lie in its cavity. Among them free oil globules and granular matter are often found. Usually, there is only room for one row of cells, but sometimes two or more lie across the tube. In the embryos of mammalia, in young animals generally, and in fishes, there is room for several rows to lie transversely across the tubes of the cell-containing network.

The cells near the margin of the lobule take the most active part in the formation of bile. The secretion passes along the tubes in the slight interstices between the cells and the basement membrane, and coloured fluid can be forced along these same interstices in a direction the opposite to that in which the bile flows during life, and, therefore, at a great disadvantage. The amount of space is in great measure determined by the quantity of blood in the vessels, and it is liable to great alteration.

The cell-containing network is directly continuous with the most minute ducts, which ramify at the circumference of the lobule, and it terminates in the centre by loops, which lie close to the intralobular vein.

Of the Finest Ducts.

The tubes of the cell-containing network are many times wider than the narrow thin-walled ducts with which they are directly continuous.

The smallest ducts are lined with a very delicate layer of epithelium, composed of *flattened cells* of a circular form, contrasting remarkably with the large *secreting cells*, which are not arranged in any definite manner within the tubes of the network.

The tubes of the cell-containing network are about 1-1000th of an inch in diameter, or more, but the finest ducts are commonly not more than 1-3000th, and they are often seen even less.

The smallest ducts in some animals branch very freely, and the branches communicate with each other at intervals. In others they pursue a long course without branching, and in the pig they form an intimate network upon the surface of the lobule. In fatty livers of the pig, however, this ductal network often contains liver-cells loaded with oil-globules.

As the ducts increase in size they are provided with a fibrous coat, and the epithelium in their interior becomes columnar.

The *interlobular ducts* do not anastomose.

Sacculi in the Coats of the Ducts.

When the fibrous coat reaches a certain degree of thickness it contains numerous little cavities, or *sacculi*, arranged entirely round the tube in the pig and in most animals, but forming two parallel rows, one on either side of the duct, in the human subject.

These little sacculi often communicate with each other in the coats of the duct. The smaller branches of the duct also anastomose frequently, either in the coats of the duct or just external to them.

The sacculi appear to serve the purpose of bringing the bile in the thick-walled ducts into closer relation with the vessels which surround them, and especially with the branches of the artery which are distributed to their coats.

Of the Vasa Aberrantia and of the arrangement of the Vessels around them.

In the transverse fissure of the human liver and some others, and in the large portal canals, are found some peculiar branches of the duct, *vasa aberrantia*, with numerous sacculi on their walls, which anastomose with each other and form a network.

In the same localities in the human subject, and in the gall-bladder, a very peculiar arrangement of the vessels occurs. Both arteries and veins form a

network, and each branch of the artery is accompanied with two branches of the vein, one on either side of it.

A contribution to the Physiology of Saccharine Urine. By Dr. GEORGE HARLEY.
(Medico-Chir. Rev., July, 1857.)

The investigations contained in the present paper are of great value, as enabling us to obtain a satisfactory answer to the question—By what means is the secretion of sugar excited? The opinion of M. Bernard is, that in a healthy animal the secretion of sugar is excited by a reflex nervous action, and that this reflex action originates in the stimulus given by the respired air to the pulmonary branches of the pneumogastric nerve. He believes, in fact, that at each act of inspiration the tender filaments of the pneumogastric nerve distributed in the lungs receive from the inhaled gases a stimulus which is transported through the trunks of these nerves to the brain, and reflected from the nervous centre along the spinal cord and splanchnic nerves to the liver. Dr. Harley does not contest the idea that the secretion of sugar may be excited through this channel; but he asks, if this be the actual mechanism of the process. How is it that while the respiration, and consequently the stimulus, continues at about the same rate during the entire day, the secretion, which is said to be the result of the stimulus, varies at different times to so great an extent? Dr. Harley, moreover, is of opinion, and we think with good reason, that if the pneumogastric is the nerve which carries the stimulus to the brain, to be from thence transmitted by the spinal cord and splanchnic nerves to the liver, *the point of departure of the stimulus is most probably in the liver itself, and that the cause of the reflex action may originate in the stimulating effect of the portal blood upon the hepatic branches of the pneumogastric nerve.* If, for example, the stimulating effect of the blood of the portal vein be imitated as much as possible by injecting into that vessel substances such as alcohol, ether, chloroform, methylated spirit, or ammonia, the liver is excited to secrete an excess of sugar, and the animal operated upon is for a time rendered diabetic. He says:—

“I injected ten cubic centimètres of sulphuric ether, mixed with thirty cubic centimètres of water, into one of the branches of the portal vein* of a full grown Newfoundland dog, half-an-hour after he had been fed. When he rose up after the operation he appeared intoxicated, and staggered a little as he moved about. This effect, however, soon disappeared, and in a few hours the animal looked as if nothing had been done to him. In two hours after the injection was made I passed a catheter into his bladder, but did not obtain sufficient urine to enable me to satisfy myself whether it contained sugar. Some hours afterwards, when I had obtained enough urine, I found that it readily reduced the copper in Barreswil's liquid, thus indicating the presence of saccharine matter. To assure myself that this effect was not due to the presence of any other substance, I boiled the urine in order to coagulate the albumen, of which it contained a little, then evaporated it almost to dryness, dissolved the residue in boiling alcohol, and filtered. The filtered liquid was next evaporated to drive off the alcohol, and an aqueous solution made. On testing the latter for sugar with the sulphate of copper solution, its presence was clearly indicated. Although by this method the existence of saccharine matter was rendered almost undeniable, I still wished to convince myself of its presence by some other means. The urine which the dog passed the next day was therefore fermented, and carbonic acid gas and a trace of alcohol were obtained, thus placing beyond a doubt the existence of sugar in the urine. In consequence of the dog breaking his chain and escaping, I am unable to state how long he remained diabetic; but he was certainly in that condition forty-eight hours after the injection of the sulphuric ether.

“The following case, of which I shall speak very briefly, proves the presence of sugar in the urine until the third day after the operation: A very large dog (the largest I ever saw) was treated in the same way as the preceding one, but

* The experiment is very easily performed by using a sharp pointed syringe, which can be pushed with facility through the coats of one of the large mesenteric veins.

he appeared to suffer much more from the operation. His urine was so loaded with bile that I was forced to decolorize it before testing it for sugar with the tartrate of potash and copper, which, however, it readily reduced. I also fermented the urine, and was able to convince myself of the existence of saccharine matter in it until three days after the injection had been made.

"In another case I injected nine cubic centimètres of ether, mixed with thirty cubic centimètres of water, into the portal vein of a small dog. He became insensible, and continued so during a few minutes. Twenty-four hours afterwards he was killed by section of the medulla oblongata, and in his urine the presence of sugar was detected, both by the fermentation and by the copper test.

"The following case shows how ammonia has the same power as ether by causing the liver to secrete an abnormal amount of saccharine matter:—

"Into the portal vein of a good-sized dog, in full digestion, I injected fifteen drops of liquor ammonia, diluted with forty cubic centimètres of water. In twenty hours afterwards, on the animal being killed, his bladder was found enormously distended with urine, which not only reduced the copper in the liquid of Barreswil, but fermented most rapidly.*

"I have on several occasions repeated the experiment with ammonia, and have not yet met with a single unsuccessful case. Attempts with chloroform, on the other hand, are not invariably successful, as they sometimes result in the death of the animal, especially if the dose be considerable, as the following example proves:—

"Into the portal vein of a large sheep-dog I injected a mixture of three grammes of chloroform, ten cubic centimètres of ether, and fourteen cubic centimètres of water. He died three hours after the operation. Notwithstanding this untoward circumstance, I found that the urine remaining in his bladder after death contained a certain amount of sugar. In operating with chloroform, it is best to use only a few drops, as then the animals seem to suffer but little inconvenience.

"In another experiment I injected into the portal vein of a small dog ten cubic centimètres of a liquid composed of equal parts of alcohol and water. Two hours afterwards I examined the urine, and found that it contained sugar, but in small quantity. As I had great difficulty in obtaining the urine of this animal, I ceased making any further observations on him.

"Into the portal vein of another dog, of the Skye-terrier breed, I injected ten cubic centimètres of the common methylated spirit, diluted with thirty cubic centimètres of water, six hours after he had eaten a full meal. For a few minutes after the operation he appeared to be intoxicated; but this effect soon disappeared, and on the following day he seemed perfectly well. When he was killed, his bladder was found distended with pale-colored urine, which contained a considerable amount of sugar, as was seen by the quantity of copper it reduced, and the facility with which it fermented.†

"It may be here mentioned that all dogs so treated vomited after the operation, from the irritation, no doubt, of the pneumogastric nerves.

"These experiments are selected from a number of others, which it is quite unnecessary to cite, as the results obtained were identical. From the total of my experiments upon this point, I conclude—firstly, that a flow of saccharine urine can be induced by means of stimulants introduced into the portal circulation, even in animals that have been fasting during twenty-four hours; and secondly, that the introduction of these stimulants sometimes produces albuminuria and an increased discharge of bile, as well as of saccharine urine."

There exists only one argument against the theory, that the secretion of sugar is due to a reflex action originating in the stimulating effect of the portal blood upon the hepatic branches of the pneumogastric nerve; namely, that while section of the pneumogastric nerves in the neck at once arrests the secretion of sugar, division of the same nerves below the point at which they send

* This and the preceding experiment I had the honor of performing at the College of France, before a commission appointed by the Society de Biologie, and consisting of Profs. Bernard, Robin, and Verdeil.

† Some of the gentlemen who attended my class last summer may perhaps recollect this experiment. It was performed on the dog with an artificial gastric fistula.

branches to the lungs is not followed by a similar result. This, indeed, is the very fact upon which Bernard founds his theory of the reflex action originating in the lungs.

In answer to this objection Dr. Harley says—

"Upon a cursory view of the subject, it might be considered equally valid as an objection to the former, and as a commendation to the latter hypothesis. If we examine the point of argument, however, we shall find that the mere fact of the disappearance of sugar from the liver after section of the cervical, and not after division of the thoracic pneumogastrics, is in reality of little value, since it can be readily accounted for on other grounds. The liver ceases to secrete sugar in all cases where animals are subjected to severe operations,* whether of the pneumogastric or of any other nerve. Indeed, whenever a febrile state of the system is set up, the glucogenic function of the liver becomes immediately disturbed; section of the cervical pneumogastrics is moreover one of the severest operations to which an animal can be subjected; it is not, therefore, in the least degree surprising, that the saccharine secretion should be arrested. The same thing occurs after a variety of severe operations on different parts of the body, entirely unconnected with the nerves supplying the liver. Besides this, the slow asphyxia to which animals with divided cervical pneumogastrics are subjected, is sufficient of itself to account for the disappearance of sugar from the liver.†

"On the other hand, since division of the pneumogastric nerves below the lungs in general entails neither the death of the animal, nor gives rise to any symptoms of asphyxia, it is not in the least surprising that the glucogenic function of the liver should in that case suffer but a slight derangement. Another fact in favor of the statement, that the disappearance of the sugar from the liver after section of the cervical pneumogastrics is simply dependent upon the severity of the operation, is to be found in the observation that an equal amount of injury done to the pneumogastric below the lungs is followed by a similar result. If, for example, the nerves are ligatured instead of divided, the animals frequently die, and in those cases no sugar is found in the liver. On examining the livers of two dogs, one of which died within sixteen, the other within twenty hours after ligature of the pneumogastrics at their entrance into the abdomen, I found that the saccharine secretion had been arrested, just as happens when the pneumogastrics are divided in the neck, and probably from an identical cause, the severity of the operation.

"Thus it is seen that there really exists no valid objection to the idea of the glucogenic function of the liver being excited by means of a reflex action, originating in the hepatic organ. On the other hand, there is a very important objection to the view of its originating in the lungs. For, as has already been observed, the air entering the lungs must present the same amount of stimulating action throughout the whole day; and yet the result of that supposed action is found to vary at different times.

"If, then, we are unprepared to relinquish entirely the idea of the intervention of nerve-agency, and to suppose that the portal blood excites the secretion of sugar by a direct stimulating action upon the tissue of the liver, we must, in absence of a better explanation of the fact, adopt the opinion that the glucogenic function in a healthy animal, under ordinary circumstances, is called forth by the stimulating action of the portal blood upon the hepatic branches of the pneumogastric nerves."

Dr. Harley is evidently as much inclined to ascribe the secretion of the sugar to direct action of the stimulus upon the tissue of the liver, as to a reflected nervous action.

These experiments are of extreme interest in explaining to us how errors in eating or drinking, by affecting the liver through the portal circulation, may produce diabetes mellitus in persons predisposed to the disease; and so also is

* See some interesting remarks upon this point at p. 360 of Bernard's Lectures.

† In proof of this statement I need but quote a single sentence from Bernard's Lectures. He says, "*Si encore on asphyxie un animal lentement, les angoisses de l'agonie font encore disparaître le sucre.*" (vol. i. p. 360.)

an experiment performed upon himself by the author, which we quote, together with the accompanying remarks:—

"About five years ago, at a time when I was much occupied in studying the physiology of diabetes, I regularly tested my urine twice a day, and on one occasion I found it to contain a small quantity of sugar. On the day in question I had partaken freely of asparagus salad; and thinking that this might perhaps be the cause of the presence of sugar, I determined to try the effect of a greater quantity. The following day, the sugar having entirely disappeared from the urine, I again partook of the same salad both in the morning and afternoon. In the evening, on testing the urine, I found very distinct indications of sugar. As the observation was to me one of great interest, I determined to make some further experiments on the subject, in order to discover how many hours this state of saccharine urine would continue. During two days I ate large quantities of the asparagus salad, taking care to have it made as stimulating as possible with vinegar and pepper. The result was far beyond my expectations; for instead of the sugar disappearing from the urine in a few hours after I had ceased partaking of the diet in question, it continued to be secreted during several days, until I at last became very much alarmed, lest the disease had been permanently induced. On the evening of the fourth day the sugar had almost entirely disappeared; but on the fifth it returned in increased quantity—so much so, that a drop of urine falling on the boot left a distinct white spot. I could not account for the recurrence of the disease, as I had been particularly careful in my diet during the two previous days.

"I have mentioned this experiment, because it appears to me that if a flow of saccharine urine be induced in a healthy person, as I consider myself to be, by disordering the digestion and over-exciting the liver, it is very probable that a cause insignificant in itself, but operating upon a predisposed constitution, might tend to produce the disease. Sugar in the urine has been found after eating cheese and other indigestible substances. It is worthy of remark, that Dr. Jessen, of Dorpat, has rendered horses diabetic by feeding them with hay damaged by moisture. M. Leconte has also found sugar in the urine of dogs after he had administered to them the nitrate of uranium. Several other substances have the same effect, and I have no doubt but that a great number more stimulants will be afterwards found to produce similar results. I cannot refrain from mentioning with what pleasure I perused a communication of M. Bernard's, entitled 'On the Influence of Alcohol and Ether on the Secretions of the Digestive Canal, of the Pancreas, and of the Liver,' read before the Société de Biologie.* M. Bernard, instead of putting the alcohol and ether, as I had done, directly into the portal vein, introduced them, by means of a long œsophagus tube, into the duodenum of dogs, and allowed them to be absorbed through the walls of the intestines into the portal circulation. The result, as might *à priori* have been anticipated, was identical with what I had previously obtained. M. Bernard, in fact, found that six cubic centimètres of alcohol mixed with an equal amount of water was sufficient to excite the liver to secrete a large quantity of sugar, even while the animal was fasting. With ether employed in a similar manner, he obtained no less successful results. It would be very interesting and important to ascertain if the simple introduction of alcohol into the stomach would produce the same effect. It is possible that in some cases it might fail to do so, on account of its being so acted upon by the gastric juice that it had lost its stimulating properties before it reached the portal circulation. The experiment is, however, one worth making, as in many works on diabetes, drunkards are said to be peculiarly liable to the disease."†

The rest of the paper is occupied by considerations tending to show that the destruction of sugar in the animal economy is accomplished, not simply in the capillaries of the lungs, but during the transit of the blood through the capillaries generally.

* "Gazette Médicale de Paris," Mai 10, 1856.

† Some interesting remarks upon the effects of diet are to be found in Dr. Garrod's Gulstonian Lectures. See "British Medical Journal," April 18th, 1857.

On the decomposition of Uric Acid in the Animal Body. By Dr. NEUBAUER. ("Annalen d. Chem. u. Pharm.," xcix. August, 1856; and Schmidt's "Jahrb.," xciv. No. 4, 1857.)

Having first ascertained the composition of the urine of rabbits living under ordinary circumstances, Dr. Neubauer added to the daily food from two to three grammes of uric acid. Before the experiment no uric acid was present in the urine; after the experiment the quantity of urea was increased from 1.3 grammes to 2, 2.5, and even to 4.2 grammes. The inference is, that uric acid is transformed within the œconomy into urea and carbonic acid. This experiment was repeated several times, and always with similar results. Other experiments were tried in which a larger quantity of uric acid was given, and in these cases the urine, in addition to the increased quantity of urea, contained some uric acid, and traces of oxalic acid.

On certain Puerperal Phenomena occurring in Bitches independently of Fecundation. By M. DELAFOND. ("Archiv. Gén. de Méd.," June, 1857.)

M. Delafond relates the history of certain bitches, not fecundated when on heat, in which, at the time when parturition would have taken place if they had been fecundated, that is between the sixtieth and sixty-third days, all the phenomena which precede or follow parturition were manifested—the breasts becoming turgescient and secreting milk, the vagina and vulva becoming tumefied and covered with a viscid mucous secretion. In one case the animal evidently expected the arrival of puppies, and arranged her bed accordingly; and not only so, but a few days later she suffered from milk-fever until a puppy was brought to her. Nor did this puppy seem to suffer from any want of food.

After the reading of this paper, MM. Leblanc, Roche, and Moreau referred to observations of a similar nature which had fallen under their own notice; and in this way several facts were brought to light which tend to confirm the correctness of Harvey's observations upon doe-rabbits, and of Buffon's upon bitches.

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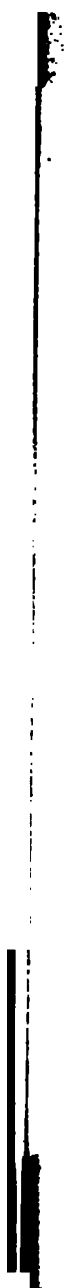
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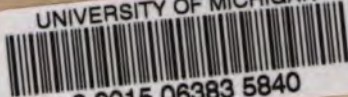
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